

Éric MONTALBETTI

COMPOSER DANS LA LANGUE DES MODÉCHELLES

PRÉSENTATION & MODE D'EMPLOI DES MODÉCHELLES

-

CATALOGUE DE TOUTES LES TRANSPOSITIONS LIMITÉES
DES 18 MODÉCHELLES DE FACTEUR 1 ou 2

-

TABLEAU DES INTERSECTIONS ENTRE CHACUNE DES TRANSPOSITIONS
DE TOUTES LES MODÉCHELLES

-

CATALOGUE DES ARPÈGES RÉGULIERS ET DÉRIVÉS DES MODÉCHELLES

-

TABLEAU D'ANALYSE D'UN CERTAIN NOMBRE D'ACCORDS OU ARPÈGES ITÉRATIFS
SELON LES MODÉCHELLES

Eric Montalbetti

Composer dans la langue des "Modéchelles"

*Une présentation de ma propre manière de concevoir l'harmonie
et des outils développés à l'Ircam avec Serge Lemouton
pour en étudier toutes les facettes*

1°/ Construction des modéchelles : un nouveau système de modes & d'échelles harmoniques

Comme beaucoup de compositeurs de ma génération qui ont commencé à composer dans les deux dernières décennies du XXème siècle, j'ai cherché à trouver mon propre langage à partir du double héritage de l'histoire de l'harmonie (depuis l'Ecole de Notre-Dame au XIIème siècle et l'Ars Subtilior Ytalica jusqu'à Olivier Messiaen, la tonalité n'ayant formé qu'un moment particulier dans l'histoire beaucoup plus vaste de la modalité) et de la musique sérielle (de la seconde école de Vienne - surtout pour l'expressionnisme exacerbé encore post-romantique d'Arnold Schönberg et Alban Berg - et des grands compositeurs de la génération de 1925 - Nono, Boulez, Berio, Stockhausen mais aussi Xenakis, Ligeti, Penderecki ou André Boucourechliev), dont les musiques avaient revêtu une importance particulière dans la construction de notre sensibilité, de par les qualités expressives inhérentes au chromatisme (tout comme on l'entend déjà dans la musique des époques baroque et romantique, et même chez Mozart par rapport à Haydn par exemple, l'histoire de la musique jouant d'un constant aller et retour entre clarté tonale ou modale et conquête du chromatisme dans la recherche de moyens d'expressivité toujours plus importants). Sans oublier les plus récents développements de la musique spectrale, de l'accord de Prométhée de Scriabine à Tristan Murail, revenant aux sources de la modalité (puisque les premiers modes sont issus des notes du cycle des quintes) tout en ouvrant l'harmonie à de nouvelles perspectives. Si la génération précédente s'était définie plutôt par opposition entre musique tonale et musique atonale (quoique Luciano Berio avait montré un premier chemin de conciliation possible entre sérialisme et modalité en jouant notamment de la notion de polarité, mais au risque, comme dans la Sinfonia ou chez Schnittke, d'une impression trop forte de collage), il nous semblait avoir besoin de pouvoir intégrer la multiplicité de nos héritages à son propre langage.

Première génération sans doute à disposer d'un accès aussi illimité aux musiques du passé et des contrées les plus éloignées, publiées et enregistrées de manière presque compulsive dans la seconde moitié du XXème siècle, nous avons réalisé combien l'histoire de la musique est celle d'un déploiement exponentiel des individualités et des techniques de composition, amenant notre époque à une diversité de styles et de personnalités tout à fait extraordinaire et réjouissante. Une belle métaphore pour souligner que si nous avons beaucoup en commun, chacun d'entre nous est unique et donc capable d'une parole distincte pour apporter à l'humanité ce qu'aucun autre ne pourra lui dire - la raison d'être de la création artistique, que ce soit en littérature, dans les beaux-arts ou en musique.

Il ne faisait donc pas de doute qu'il nous fallait trouver chacun sa propre manière pour s'exprimer en musique, sans rejeter l'un ou l'autre de nos multiples héritages, mais en tentant d'éviter le risque d'une synthèse sans cohérence propre.

C'est ainsi que j'ai commencé à rechercher une autre logique possible dans l'organisation des hauteurs.

Il m'est aussi apparu que la conception de systèmes harmoniques dans la musique occidentale, qu'il s'agisse des modes antiques et du Moyen-Âge, de la tonalité, du sérialisme, ou des modes développés par Olivier Messiaen, est restée trop longtemps contenue dans les limites de l'octave, comme si le tempérament égal ne permettait pas de concevoir des échelles harmoniques plus complexes dont les composants diffèrent d'une octave à l'autre.

Même les systèmes en quarts de tons développés par Ivan Wyschnegradsky (séries de 24 notes en quarts de tons comme une gamme chromatique démultipliée par 2) aussi bien que par Alain Bancquart (essentiellement des gammes modales, généralement de 13 notes, sélectionnées parmi les 24 quarts de tons pour les qualités de leurs relations respectives) sont restées développées dans les limites de l'octave, là aussi comme si la notion de gamme devait rester intrinsèquement liée à l'octave.

Pourtant, l'analyse spectrale nous a depuis longtemps appris que les formants du son sont de plus en plus riches et complexes dans les fréquences élevées. De même, les musiques extra-européennes comme les ragas indiens « montent » des gammes beaucoup plus complexes, quoique transmises essentiellement oralement.

Que l'on limite son langage harmonique à l'emploi exclusif des 12 sons du tempérament égal, ou qu'on y intègre des micro-intervalles, nous ne voyons pas de raison valable à cette limitation.

Il nous est au contraire apparu non seulement possible mais aussi fructueux de construire un système de modes et d'échelles harmoniques cohérent et ordonné à partir de la simple itération de séquences génératives plus ou moins complexes, quel que soit le caractère octaviant ou non-octaviant des modes et des échelles ainsi obtenus, et dont l'ensemble permet de faire sonner l'orchestre aussi bien que le piano dans toute la largeur de sa tessiture avec une richesse renouvelée.

Grâce à cette conception, le redoublement de certaines notes à une ou plusieurs octaves trouve même sa justification échelle par échelle, et l'on peut vérifier que, dans un contexte harmonique donné, ces redoublements sonnent mieux que ceux qui seraient étrangers à l'échelle donnée.

Dans le prolongement du travail d'Olivier Messiaen et sans quitter encore le cadre du tempérament égal tel qu'il est employé depuis la fin du XVII^{ème} siècle, j'ai donc avant tout entrepris de construire et classer tous les modes (octavians) et les échelles harmoniques (non-octaviantes, ou plus exactement ne se reproduisant pas à l'identique d'une octave à l'autre), obtenus par l'itération d'une séquence de base (ou « séquence générative ») composée d'une suite d'intervalles de ton(s) et/ou de demi-ton(s).

Afin de circonscrire ce système harmonique dans un cadre raisonnable et pour s'assurer qu'il resterait possible de distinguer chaque mode facilement d'oreille, je me suis limité à des modes et des échelles harmoniques dont la séquence de base est « de facteur ≤ 2 », c'est à dire composée d'une alternance de tons et demi-tons sans qu'un même intervalle soit jamais répété consécutivement plus d'une fois, ce qui a permis de définir un ensemble harmonique à la fois cohérent et suffisamment limité.

J'ai également choisi de limiter l'ensemble des séquences génératives à celles comprises entre le demi-ton (mode 0 correspondant à la gamme chromatique) et l'octave - même si ce système comprend un ensemble d'échelles non-octaviantes, et qu'on pourrait donc aussi bien imaginer des séquences génératives plus grandes que l'octave, tout du moins celles de facteur ≤ 2 qui ne se recoupent pas avec les modes et les échelles déjà définis, ce qui restera à explorer ultérieurement.

De même, je n'ai pas considéré les intervalles plus grands que le ton entier dans ce premier système (si ce n'est dans la construction d'arpèges spécifiques comme on le verra plus loin), car il m'a semblé que la tierce mineure ou la seconde augmentée peut toujours être mentalement comblée ou divisée en ton + $\frac{1}{2}$ ton (ou trois $\frac{1}{2}$ tons).

J'ai nommé chaque mode ou échelle ainsi défini en fonction de l'intervalle dans lequel s'inscrit chaque fois sa séquence générative (0 pour la gamme chromatique, 1 pour la gamme par tons, 2 pour le Mode 2 (-u aussi bien que u-)... et jusqu'à 11 pour l'octave).

Jusqu'à l'échelle 7 incluse, on peut considérer qu'il n'existe qu'un seul mode ou échelle possible, car toutes les permutations possibles d'une séquence générative de facteur ≤ 2 dans un intervalle inférieur ou égal à la sixte mineure aboutissent à l'une ou l'autre transposition de l'échelle obtenue à partir de la séquence générative originale.

A partir de l'échelle 8 construite dans un intervalle compris entre la sixte majeure et le mode 11, plusieurs séquences génératives sont possibles, et nous avons distingué les différentes échelles ou modes construits à partir de séquences génératives différentes dans un même ambitus par des lettres (8a, 8b, 9a, 9b, 10a, 10b, 10c, 11a, 11b, 11c).

Il apparaît qu'un système cohérent de 18 modes et échelles harmoniques ou "modéchelles" (8 modes et 10 échelles), ou plus exactement 16 modéchelles itératives auxquelles nous ajoutons la gamme chromatique et la gamme par tons, regroupe l'ensemble des possibilités harmoniques ainsi définies.

Ce système permet de repenser les relations entre la gamme chromatique, la gamme par tons, les modes 2, 3 et 5 déjà « trouvés » par Olivier Messiaen, et les échelles 4, 6, 7, 8a, 8b, 9a, 9b, 10a, 10b et 10c nouvellement définies.

On notera bien ici qu'en nous limitant à des modes « itératifs », c'est à dire procédant de la répétition à l'infini d'une même séquence générative, elle même inscrite dans un intervalle inférieur ou égal à l'octave et de facteur ≤ 2 , ainsi qu'en excluant les intervalles plus grands que le ton entier, on a exclu de ce premier système tout un ensemble de modes anciens, aussi bien que certains « modes à transposition limitée » d'Olivier Messiaen.

Par comparaison à la technique du langage musical de Messiaen, nos Modes 1, 2 et 3 sont identiques à ceux ainsi dénommés par Messiaen, mais ce n'est pas le cas des suivants.

Notre Mode 5 (Ionien ou Grand Ionien) {1 ton + 1 ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton} correspond exactement au « mode 6 » de Messiaen, et il est tout autant apparenté au « mode 5 » de Messiaen { $\frac{1}{2}$ ton + 3M + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + 3M + $\frac{1}{2}$ ton} dont une permutation circulaire est résumable à {3M + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton} qu'on peut redévelopper en {1 ton + 1 ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton}.

Ceci dit, les modes de Messiaen numérotés « 4 » et « 5 » comprenant des tierces mineures ou majeures, tout comme son mode « 7 » qui est de facteur 4 { $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + 1 ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + 1 ton + $\frac{1}{2}$ ton} et dont une permutation circulaire peut se résumer à {1 ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton + $\frac{1}{2}$ ton}, sont exclus de notre système.

Nos échelles numérotées 4, 6, 7, 8a, 8b, 9a, 9b, 10a, 10b et 10c n'avaient à notre connaissance jusqu'ici pas encore été explorées.

Ils sont à la base de la plupart de mes compositions, comme on l'entend déjà bien par exemple dans la fantaisie symphonique *Eclair physiologique* créée en 2018 au Printemps des Arts de Monte Carlo, le concerto pour flûte & orchestre *Memento vivere* créé en 2019 par Emmanuel Pahud, l'*Ouverture philharmonique* créée par Mikko Franck en 2021 à la Philharmonie de Paris ou le cycle *Cavernes & Soleils* créé en 2022 par l'Ensemble intercontemporain, Christina Daletskia et Matthias Pintscher.

On peut travailler dans ce système suivant une logique plutôt sérielle ou plutôt modale à volonté, voire une combinaison de « stratégies locales » sérielles dans un ensemble harmonique d'essence plutôt modale ou « scalaire ».

On peut aussi à volonté intégrer à ce système une réflexion sur un langage tonal élargi, les différentes expressions du mode 11 (11a, 11b et 11c) étant apparentées aux modes majeur et mineurs mélodiques ascendant ou descendant, « enrichis » chaque fois d'un intervalle complémentaire.

Pour explorer les propriétés des modéchelles, leurs points communs et leurs différences, la quantité d'informations à manipuler étant assez importante (18 modéchelles dans chacune de leurs transpositions limitées), j'avais besoin d'un outil de C.A.O. (composition assistée par ordinateur), non pas pour composer, mais pour travailler sur mon matériau au stade des esquisses de la composition.

Pour cela, j'ai d'abord élaboré quelques premiers patches sous OpenMusic (un logiciel lui-même dérivé de Patchwork développé à l'Ircam à la fin des années 1980) pour développer chaque mode ou échelle et pour en analyser toutes les caractéristiques et les relations les uns avec les autres. Mais ce travail restait un work in progress et je n'étais pas assez aguerri en programmation pour développer seul des outils suffisamment maniables, au point de travailler encore à la main pour réaliser des calculs complexes.

Les outils dont j'avais besoin pouvant être utiles à d'autres compositeurs, quel que soit le système harmonique qu'ils choisissent d'utiliser ou d'inventer, j'ai donc proposé à l'Ircam de développer un nouveau logiciel de C.A.O., ce que nous avons pu réaliser en 2025 avec Serge Lemouton grâce à l'accord de Frank Madlener pour réaliser ce projet à l'Ircam.

Une bourse du CNM m'a permis de consacrer le temps nécessaire à la réflexion pour préciser le cahier des charges du logiciel programmé par Serge Lemouton, mais surtout pour commencer à l'exploiter en dressant le catalogue qui suit cette présentation et en tirer un certain nombre d'enseignements qui pourront servir de guide dans la composition de nouvelles partitions.

2°/ Classification des modes & échelles harmoniques de facteur ≤2

Précisons ici que :

- Les modes ou échelles sont ordonnés suivant l'ambitus croissant de leur séquence générative, du ½ ton à l'octave, soient 12 intervalles numérotés de 0 à 11.
- C'est dire que l'ambitus de la séquence générative de chaque mode ou échelle constitue l'intervalle caractéristique de base de chacun, et on a donc nommé chaque mode ou échelle à partir du numéro de l'intervalle correspondant.
- Il existe parfois plusieurs « expressions » d'un même mode ou échelle, correspondant à toutes les combinaisons possibles de tons et demi-tons dans un même intervalle de base : on a donc désigné chacune de ces expressions par une lettre de l'alphabet (par exemple 8a et 8b).
- En revanche, on n'a pas distingué les modes ou échelles obtenus par permutation circulaire des intervalles d'une même séquence générative, puisque ces permutations circulaires engendreraient au total les mêmes suites harmoniques que toutes les différentes transpositions du mode ou de l'échelle construite à partir de la séquence générative originale (du fait du caractère itératif des modes ou échelles construits ici chaque fois à partir d'une seule et même séquence générative).
- J'ai ajouté une dénomination faisant référence à leur séquence générative en suivant les règles de la métrique latine.
- Le nombre qui désigne le mode ou l'échelle correspond également au nombre de transpositions limitées du mode (il n'y a pas de transposition possible de la gamme chromatique, une seule transposition de la gamme par tons, 2 transpositions du mode 2 etc. jusqu'à 11 transpositions du mode 11a aussi bien que du mode 11b ou du mode 11c)

o Mode 0 = chromatisme (ou mode Pyrrhique u)	2m	(octaviant)	12 sons
o Mode 1 = Gamme par tons (Spondée -)	2M	(octaviant)	6 sons
o Mode 2 = Messiaen 2 (Iambe u- = Trochée -u)	3m	(octaviant)	8 sons
o Mode 3 = Messiaen 3 Dactyle -uu = Amphibraque u-u = Anapeste uu-	3M	(octaviant)	9 sons
o Echelle 4 = Crétique -u- = Bacchius u-- = Palimbacchius --u	4J	(échelle) (sur 5 octaves)	7/12 sons
o Mode 5 = Ionien uu-- = GrandIonien --uu = Antipaste u--u = Choriambe -uu- 4+	4+	(octaviant, = Messiaen 6)	8 sons
o Echelle 6 = Trochée+Dactyle -u-uu = -uu-u = u-uu- = uu-u-	5J	(échelle) (sur 7 octaves)	8/12 sons
o Echelle 7 = Crétique-Trochée -u--u = Iambe+Crétique (u--u-) etc	6m	(échelle) (sur 2 octaves)	8/12 sons
o Echelle 8a = -uu--u Choriambe+Trochée = uu--u- Ionien+Iambe etc	6M	(échelle) (sur 3 octaves)	8/12 sons
o Echelle 8b = -u-uu Crétique+Dactyle = u--uu- Bacchius+Anapeste etc	6M	(échelle) (sur 3 octaves)	8/12 sons
o Echelle 9a = -uu--uu Dactyle+GrandIonien = uu--uu- etc	7m	(échelle) (sur 5 octaves)	8/12 sons
o Echelle 9b = -u-u-uu Trochéex2+Dactyle = u-u-uu- etc	7m	(échelle) (sur 5 octaves)	8/12 sons
o Echelle 10a = --uu--u GrandIonien+Palimbacchius = -uu--u- = --u-uu etc	7M	(échelle absolue/ambitus)	8/12 sons
o Echelle 10b = -uu-uu-u Dactylex2+Trochée= uu-uu-u- etc	7M	(échelle absolue/ambitus)	9/12 sons
o Echelle 10c = -u--u-u Crétique+Trochéex2 = u--u-u- etc	7M	(échelle absolue/ambitus)	8/12 sons
o Mode 11a = --u-uu-u Palimbacchius+Dactyle+Trochée = -u--u-uu etc	8	(octaviant)	8 sons
o Mode 11b = -u--uu-u Crétique+Dactyle+Trochée = u--uu-u- etc	8	(octaviant)	8 sons
o Mode 11c = -u-uu--u Crétique+Anapeste+Trochée = u-uu--u- etc	8	(octaviant)	8 sons

- On notera bien entendu que les différentes expressions du Mode 11, dont la séquence générative est comprise dans l'intervalle d'une octave, sont apparentées au système tonal :
 - o Mode 11a = -u--uu-u (mineur mélodique descendant + 6m/M)
 - o Mode 11b = -u-uu--u (mineur mélodique descendant + 4+)
 - o Mode 11c = --u-uu-u = u (Majeur + 6m/M) = -u--u-uu (mineur mélodique ascendant + 7m/M) = u-uu-u-- (mode andalou)
- Etant donné le caractère itératif de nos échelles ou modes, nous voudrions souligner ici que les différentes permutations de chacun des modes ne forment pas de nouveaux modes proprement dit, mais appartiennent nécessairement toutes à l'une des différentes transpositions du même mode. Ce qui donne un système de 8 modes & 10 échelles harmoniques de facteur ≤ 2 .

La classification des modes de facteur ≤ 2 est donc relativement simple et limitée.

- On peut réordonner cette liste de Modes et d'Echelles suivant le caractère octaviant ou non octaviant de chacun, et mieux encore en fonction du nombre d'octaves dans lesquels ils s'inscrivent, une échelle pouvant se trouver octaviante toutes les 2, 3, 5, 7 octaves... en fonction de l'intervalle dans lequel s'inscrit sa séquence générative (plus ou moins sous-multiple de 2, 3, 5 ou 7 octaves) :
 - o Mode 0 2m (octaviant)
 - o Mode 1 2M (octaviant)
 - o Mode 2 3m (octaviant)
 - o Mode 3 3M (octaviant)
 - o Mode 5 4+ (octaviant)
 - o Mode 11a 8 (octaviant)
 - o Mode 11b 8 (octaviant)
 - o Mode 11c 8 (octaviant)
 - o Echelle 7 6m (échelle) (sur 2 octaves)
 - o Echelle 8a 6M (échelle) (sur 3 octaves)
 - o Echelle 8b 6M (échelle) (sur 3 octaves)
 - o Echelle 4 4J (échelle) (sur 5 octaves)
 - o Echelle 9a 7m (échelle) (sur 5 octaves)
 - o Echelle 9b 7m (échelle) (sur 5 octaves)
 - o Echelle 6 5J (échelle) (sur 7 octaves)
 - o Echelle 10a 7M (échelle absolue / ambitus du piano)
 - o Echelle 10b 7M (échelle absolue / ambitus du piano)
 - o Echelle 10c 7M (échelle absolue / ambitus du piano)

- Ce premier système harmonique n'est bien sûr qu'un point de départ ouvrant sur d'autres possibilités, qu'on y intègre plus tard des échelles construites sur des séquences génératives de facteur ≥ 3 (y compris la gamme majeure classique !), dans des intervalles plus grands que l'octave (9èmes, 10èmes, 11èmes....), ou en micro-intervalles.
- On pourrait bien sûr aussi plus tard étendre cette première étude à des échelles plus complexes comme par exemple la suite $\{-u-u--/uu-uu--/uu--uu-/uu-u-u\}$ composée de différentes expressions de la 9^{ème} échelle harmonique, etc.

3°/ Parenté / Résolution :

On peut reclasser les modéchelles en observant la structure de leurs séquences génératives respectives, suivant leur plus ou moins grand lien de parenté.

On peut notamment rapprocher les modes ou échelles dont la séquence générative est construite dans un intervalle multiple ou sous-multiple de celui d'un autre mode ou échelle.

On notera aussi que les échelles 4 « crétique » et 9a qu'on appellera « grand-crétique » sont particulièrement proches, l'échelle 9a pouvant être lue comme $\{(-) + (u\ u) + (-\ u\ u)\}$ que l'on peut résumer en $\{2\text{ tons} + 1\text{ ton} + 2\text{ tons}\}$ à l'instar du mode 4 « crétique » composé de $\{1\text{ ton} + \frac{1}{2}\text{ ton} + 1\text{ ton}\}$.

Grâce au logiciel développé à l'Ircam, nous avons pu explorer plus avant l'analyse comparative de toutes les transpositions de tous les modes, à partir du nombre de leurs notes communes deux à deux, dans la tessiture du piano et de l'orchestre ou pour un ambitus donné (choisi en fonction de l'instrumentation de chaque projet ou passage sur lequel travailler).

Nous en avons déduit le tableau numérique des intersections entre toutes les modéchelles dans chacune de leurs transpositions (pièce jointe, lisible au format A3).

On peut aussi concevoir une classification en fonction du degré de complexité de la séquence générative de base de chaque mode ou échelle si l'on développe un système de modes et d'échelles de facteur >2 :

- de facteur 1 (modes 0, 1 et 2) ou de facteur 2 (modes 3, 5 et 11 et échelles 4, 6, 7, 8, 9, et 10), puis de facteur 3 etc.
- et du nombre de sous-groupes composant la séquence de base.

4°/ Construction d'arpèges :

Il nous a paru intéressant de créer des outils pour générer et étudier différentes sortes d'arpèges harmoniques à partir des modéchelles :

- arpèges simples, c'est à dire réguliers (toutes les 2 ou 3 notes etc.),
- arpèges dérivés, composés sur le modèle de la séquence de base (ex : mode 4 -u- toutes les 2 notes - 1 note - 2 notes, puis toutes les 3 notes - 1 note - 3 notes / 3 notes - 2 notes - 3 notes / 4 notes - 2 notes - 4 notes etc.),
- arpèges dérivés puissance 2 (ex mode 4 -u- = toutes les 4 notes - 2 notes - 4 notes / 2 notes - 1 note - 2 notes / 4 notes - 2 notes - 4 notes),
- arpèges caractéristiques définis à partir de l'analyse des notes communes à 2 transpositions d'une même échelle,
- arpèges caractéristiques définis a contrario à partir de l'analyse des notes exclues, c'est à dire n'appartenant pas aux 2 transpositions d'une même échelle,
- nous pouvons bien sûr filtrer ou non les résultats pour éviter les répétitions de note modulo 12, du grave à l'aigu ou bien de l'aigu au grave, à partir d'une note donnée,
- et nous pouvons analyser l'appartenance des résultats aux différentes transpositions de tous les modes & échelles harmoniques.

5°/ Autres outils :

- Par ailleurs, nous avons créé un outil d'analyse permettant de comparer un fragment mélodique ou harmonique donné à toutes les transpositions des différents modes ou échelles harmoniques, afin d'analyser son appartenance à l'une ou l'autre. On a même la possibilité d'analyser si le fragment appartient à l'un quelconque de tous les arpèges réguliers ou dérivés des modéchelles.
- Nous avons aussi créé un outil de recherche pour vérifier l'appartenance d'une suite d'intervalles donnée à telle ou telle modéchelle (ex : à quelle modéchelle appartient la suite 3m3M4+5J6m6M ?), étudiée non plus comme une suite de notes précises, mais dans l'absolu. On peut ainsi étudier toutes sortes d'arpèges à partir de suites d'intervalles donnés, dont le logiciel nous permet de vérifier l'appartenance à telle ou telle modéchelle. Ces arpèges peuvent être structurés suivant une logique chaque fois redéfinie, par exemple exponentiellement croissants ou décroissants, ou bien alternant deux logiques opposées, etc.
- On peut également réordonner les résultats obtenus pour en proposer une description aléatoire, ou bien selon un mouvement centripète ou centrifuge, en mouvements conjoints ou deux en deux notes, dans une direction ou dans l'autre.
- Nous avons ajouté un outil d'analyse spectrale permettant de vérifier le caractère plus ou moins spectral d'un arpège dérivé.
- Et nous avons ajouté un outil permettant de vérifier à quelle classe d'accord (selon l'analyse d'Allen Forte) appartient un arpège dérivé.
- Enfin, un outil « maquette » permet de rapprocher différents résultats sous forme de partition polyphonique,
- un travail parallèle a pu être réalisé pour la construction de cellule rythmiques caractéristiques de chaque modéchelle, ce qui permet de présenter les modéchelles rythmées selon leur schéma intervallique, et pourquoi pas développer des polyrythmies polymodales en superposant les résultats ainsi obtenus.

Grâce au logiciel "Modes/Echelles", nous sommes à même d'explorer plus avant les caractéristiques de chaque modéchelle et de leurs relations.

Les résultats en sont présentés sous forme de tableaux et de listes, comme :

- le tableau donnant le nombre de notes communes à deux modéchelles dans chacune de leurs transpositions limitées (intersections), à partir duquel on peut définir des règles de modulation (avec les tonalités les plus proches ou au contraire les plus éloignées, ou selon un parcours plus ou moins progressif),
- le catalogue des arpèges réguliers et des arpèges dérivés de chacune des modéchelles,
- le tableau d'analyse des accords ou arpèges itératifs permettant de vérifier, selon le nombre d'itérations, à quelle(s) modéchelle(s) ils appartiennent, et d'en déduire des accords ou arpèges caractéristiques propres à certaines modéchelles.

Naturellement, ces tableaux ne sont là que comme un support à l'imagination et seule la pratique quotidienne de ces explorations harmoniques permet d'en maîtriser les couleurs, les relations possibles et les conséquences formelles ou expressives.

En conclusion, je voudrais préciser un point important.

La recherche de cohérence propre à son langage me paraît toujours essentielle. Mais elle ne doit bien sûr pas enfermer l'écriture dans un système déterministe d'où serait chassée toute musicalité.

À l'ère des multiples synthèses de styles auxquelles je n'ai jamais pu adhérer, que j'entends plutôt comme un collage sans raison d'être, mais alors que je ne voulais pas renoncer à la fois à l'héritage sériel si fortement capable d'expressivité, et à une pensée harmonique issue de toute l'histoire de la musique modale, voire sans omettre jusqu'à certains éléments de musique spectrale, il m'a semblé que le système des modéchelles apporte une clef essentielle à une pensée harmonique refondée pour accueillir tous ces héritages dans le creuset d'un système nouveau, à la fois plus large mais aussi plus cohérent.

Et si j'invite naturellement chacun à l'apprécier dans ma musique, je n'exclue pas que ce système puisse servir à d'autres, en invitant d'autres compositeurs à se l'approprier et à le remodeler chacun à sa propre façon.

Eric Montalbetti

CATALOGUE DE TOUTES LES TRANSPOSITIONS LIMITÉES
DES 18 MODÉCHELLES DE FACTEUR 1 ou 2
donné dans l'ambitus du piano (La0 à Do8 en notation américaine)

Modéchelle 0 = chromatisme (u) (12 sons, octaviant)

zéro transposition (1 seule expression de 12 sons)



Modéchelle 1 = gamme par tons (-) (6 sons, octaviant)

1 seule transposition (= 2 expressions de 6 sons chacune)

1.0



1.1



Modéchelle 2 (-u) (8 sons, octaviant)

2 transpositions = 3 expressions

2.0



2.1



2.2



Modéchelle 3 (-uu) (9 sons, octaviant)

3 transpositions = 4 expressions

3.0



3.1



3.2



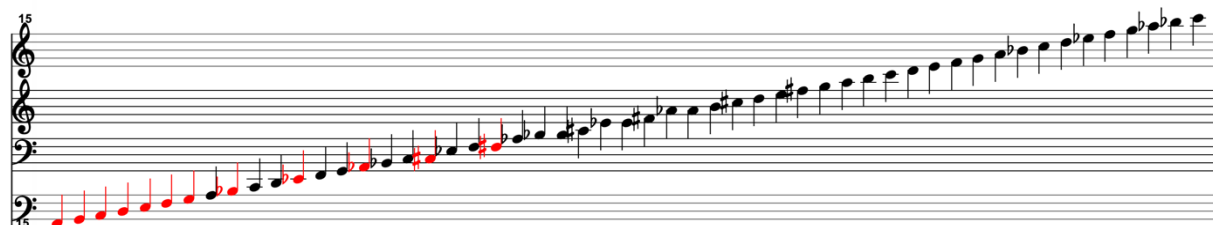
3.3



Modéchelle 4 (-u-) (7 à 12 sons, non-octaviant sur 5 octaves)

4 transpositions = 5 expressions

4.0



4.1



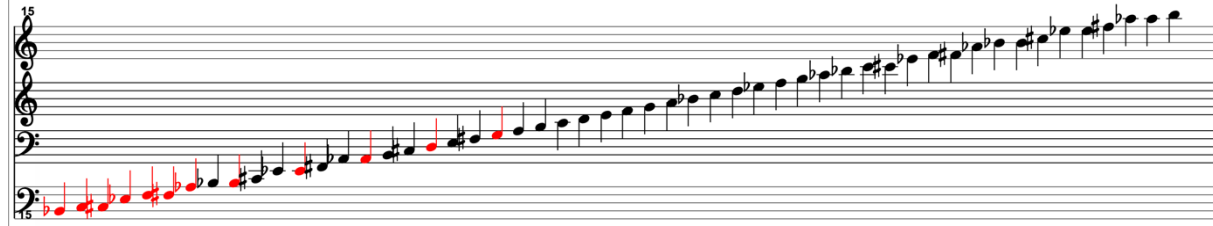
4.2



4.3



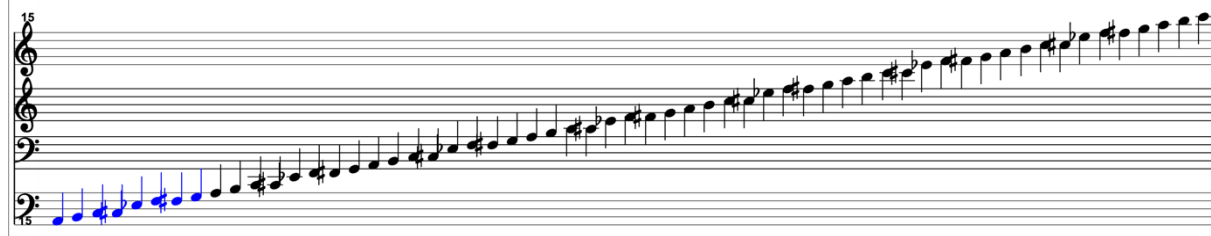
4.4



Modéchelle 5 (-uu-) (8 sons, ctaviant)

5 transpositions = 6 expressions

5.0



5.1



5.2



5.3



5.4



5.5

A musical score for a piano exercise, labeled 5.5. The score is written on a grand staff consisting of a treble clef staff and a bass clef staff. The key signature is one sharp (F#), and the time signature is 4/4. The music consists of a continuous ascending scale. The first 15 notes of the bass staff are highlighted in blue, while the remaining notes are black. The scale starts on a low C in the bass staff and ascends to a high G in the treble staff. The first 15 notes of the bass staff are: C2, C#2, D2, D#2, E2, E#2, F#2, G2, G#2, A2, A#2, B2, B#2, C3, and C#3. The remaining notes continue the scale up to G4.

Modéchelle 6 (-u-uu) (8 à 12 sons, non-octaviant sur 7 octaves)

6 transpositions = 7 expressions

6.0



6.1



6.2



6.3



6.4



6.5

Musical score for exercise 6.5, featuring a treble and bass staff. The treble staff begins with a treble clef and a key signature of one sharp (F#). The bass staff begins with a bass clef and a key signature of one sharp (F#). The score consists of a continuous melodic line that ascends from the bottom of the bass staff to the top of the treble staff. The melody is composed of eighth and sixteenth notes, with some notes marked with red stems. The exercise is labeled with a '15' in the top left corner of the treble staff and a '15' in the bottom left corner of the bass staff.

6.6

Musical score for exercise 6.6, featuring a treble and bass staff. The treble staff begins with a treble clef and a key signature of one sharp (F#). The bass staff begins with a bass clef and a key signature of one sharp (F#). The score consists of a continuous melodic line that ascends from the bottom of the bass staff to the top of the treble staff. The melody is composed of eighth and sixteenth notes, with some notes marked with red stems. The exercise is labeled with a '15' in the top left corner of the treble staff and a '15' in the bottom left corner of the bass staff.

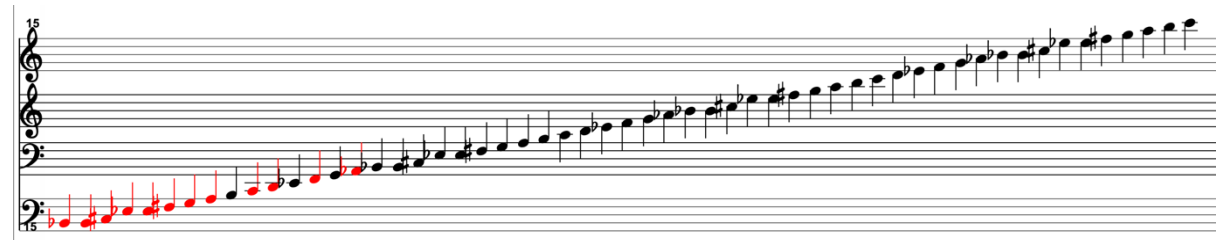
Modéchelle 7 (-u--u) (8 à 12 sons, non-octaviant sur 2 octaves)

7 transpositions = 8 expressions

7.0



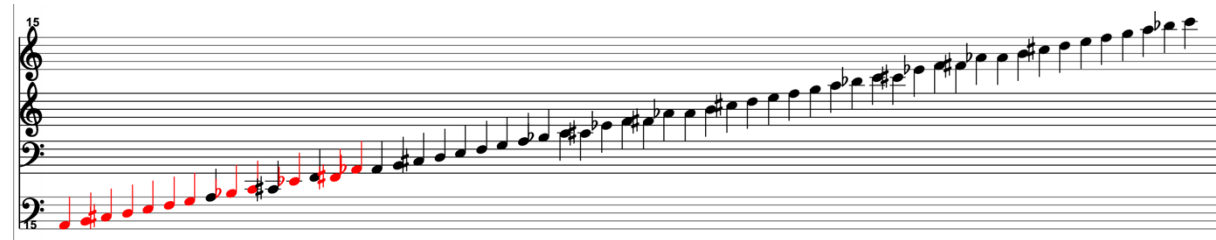
7.1



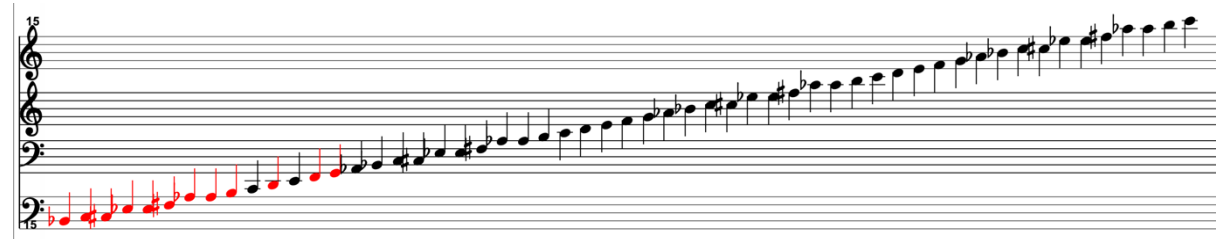
7.2



7.3



7.4



7.5



7.6



7.7



Modéchelle 8a (-uu--u) (8 à 12 sons, non-octaviant sur 3 octaves)

8 transpositions = 9 expressions

8a.0



8a.1



8a.2



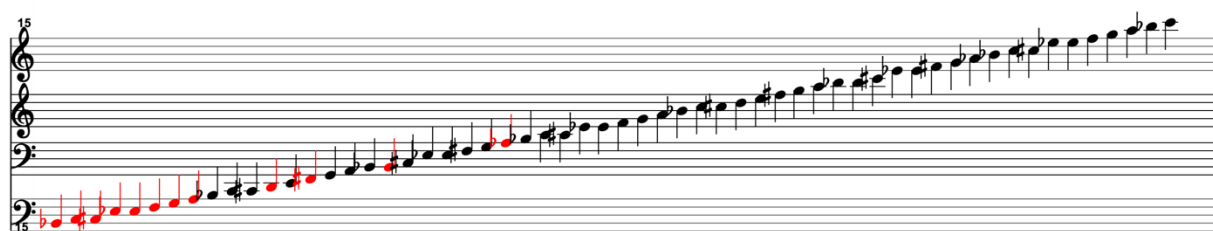
8a.3



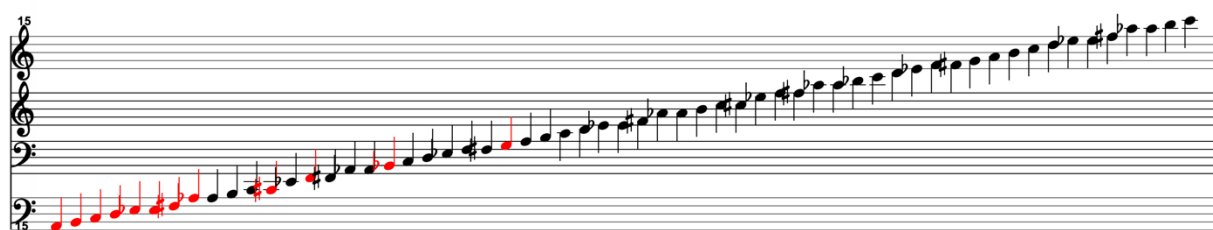
8a.4



8a.5



8a.6



8a.7



8a.8



Modéchelle 8b (-u--uu) (8 à 12 sons, non-octaviant sur 3 octaves)

8 transpositions = 9 expressions

8b.0



8b.1



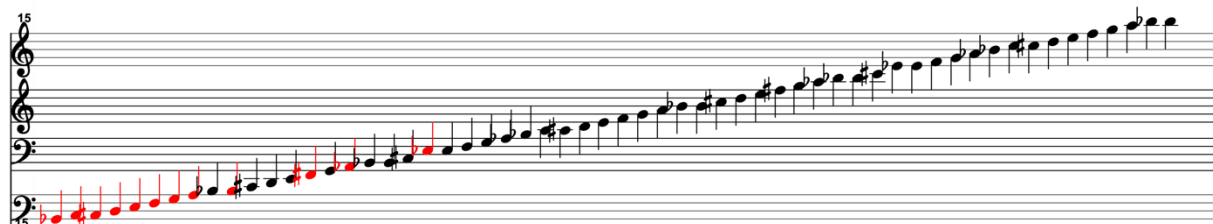
8b.2



8b.3



8b.4



8b.5



8b.6



8b.7



8b.8



Modéchelle 9a (-uu--uu) (8 à 12 sons, non-octaviant sur 5 octaves)

9 transpositions = 10 expressions

9a.0



9a.1



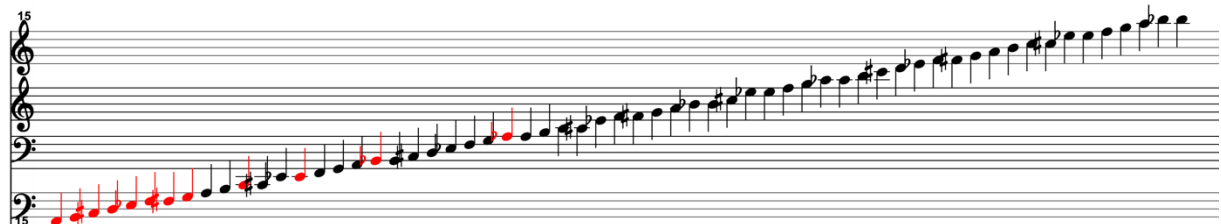
9a.2



9a.3



9a.4



A musical score for the song "The Rose Tree". The score is written for a piano (p) and a vocal line. The piano part is in the bass clef, and the vocal part is in the treble clef. The key signature has one flat (B-flat), and the time signature is 4/4. The score consists of two systems. The first system has a vocal line starting on a whole note G4 and a piano accompaniment starting with a bass line of eighth notes and a treble line of quarter notes. The second system continues the vocal line with a whole note G4 and the piano accompaniment with a bass line of eighth notes and a treble line of quarter notes. The score ends with a double bar line.

[illegible]

A musical score for the song 'The Rose Tree'. The score is written for a single melodic line on a five-line staff. The key signature has one sharp (F#), and the time signature is 4/4. The melody begins on a middle C (C4) and ascends stepwise through the scale, with some notes marked with red stems. The score includes a treble clef and a key signature of one sharp (F#).

Musical notation for the 'Cantata for the Feast of the Ascension'. The notation is written on a grand staff with two staves. The upper staff features a treble clef and a key signature of one sharp (F#). The lower staff features a bass clef and a key signature of one flat (Bb). The music consists of a series of eighth and sixteenth notes, with some notes marked with red stems. The notation is arranged in a single line across the two staves.

Modéchelle 9b (-u-u-uu) (8 à 12 sons, non-octaviant sur 5 octaves)

9 transpositions = 10 expressions

9b.0



9b.1



9b.2



9b.3



9b.4



9b.5



9b.6



9b.7



9b.8



9b.9



Modéchelle 10a (--uu--u) (8 à 12 sons, non-octaviant sur tout l'ambitus)

10 transpositions = 11 expressions

10a.0



10a.1



10a.2



10a.3



10a.4



A musical score for a piece titled "The Great Wall of China". The score is written for a piano (p) and features a treble and bass staff. The key signature is one sharp (F#), and the time signature is 4/4. The melody is composed of eighth and sixteenth notes, with a prominent ascending line in the treble staff. The bass staff provides a harmonic accompaniment, including a descending line of eighth notes. The score is marked with a "p" (piano) dynamic and includes a "15" measure marker at the beginning of the first staff.

A musical score for the song 'The Rose Tree'. The score is written for a single melodic line on a five-line staff. The key signature is one sharp (F#), and the time signature is 4/4. The melody begins on a middle C (C4) and ascends stepwise through the scale, with some chromatic alterations (flats and sharps) in the upper register. The score is presented in a standard musical notation format with a treble clef and a key signature of one sharp.

A musical score for the song 'The Rose Tree'. It features three staves: a vocal line in the treble clef and two piano accompaniment lines in the bass clef. The key signature has one flat (B-flat), and the time signature is 4/4. The melody is a simple, ascending line with a few descending steps. The piano accompaniment consists of a steady eighth-note bass line and a treble line with chords and single notes. The score is marked with a '15' at the beginning of each staff, indicating the measure number.

A musical score for the song 'The Rose Tree'. The score is written for three parts: Soprano, Alto, and Bass. The Soprano part is on a single staff with a treble clef. The Alto and Bass parts are on a grand staff (two staves) with a treble clef for the Alto and a bass clef for the Bass. The key signature is one flat (B-flat), and the time signature is 4/4. The music consists of a single melodic line that ascends steadily from the bottom of the Bass staff to the top of the Soprano staff. The notes are primarily eighth and quarter notes, with some half notes. The lyrics 'The Rose Tree' are written below the Bass staff, aligned with the notes.

15

16 17 18 19 20 21 22 23 24

15

10a.10



Modéchelle 10b (-u--u-u) (8 à 12 sons, non-octaviant sur tout l'ambitus)

10 transpositions = 11 expressions

10b.0



10b.1



10b.2



10b.3



10b.4



10b.5



10b.6



10b.7



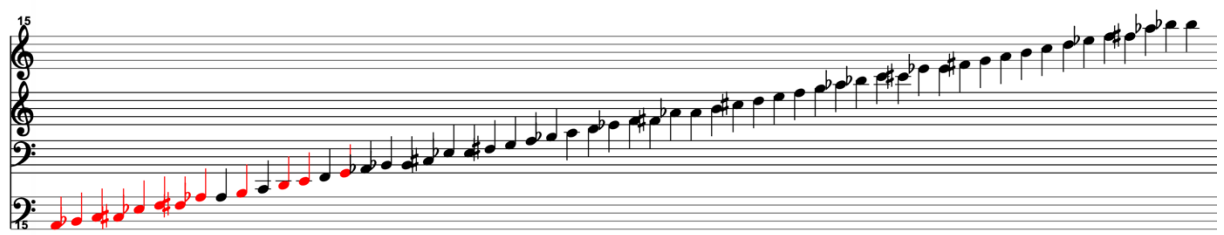
10b.8



10b.9



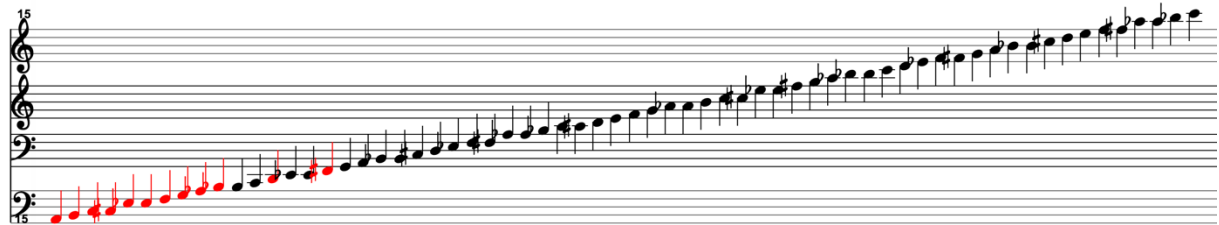
10b.X



Modéchelle 10c (-uu-uu-u) (9 à 12 sons, non-octaviant sur tout l'ambitus)

10 transpositions = 11 expressions

10c.0



10c.1



10c.2



10c.3



10c.4



10c.5



10c.6



10c.7



10c.8



10c.9



10c.X



Modéchelle 11a (-u--uu-u) (8 sons, octaviant)

11 transpositions = 12 expressions

11a.0



11a.1



11a.2



11a.3



11a.4



A musical score for a piece titled "The Great Wall of China". The score is written for a piano (p) and features a treble and bass staff. The key signature is one sharp (F#), and the time signature is 4/4. The melody is composed of eighth and sixteenth notes, with a steady upward climb. The bass line provides a harmonic foundation with similar rhythmic patterns. The score is marked with a piano (p) dynamic and includes a repeat sign at the end.

A musical score for the song 'The Rose Tree'. The score is written for a piano (p) and features a treble and bass staff. The melody is written in the treble staff, and the bass line is in the bass staff. The key signature is one flat (B-flat), and the time signature is 4/4. The score includes a key signature change to one sharp (F#) in the middle. The melody is a simple, folk-like tune with a repeating pattern of eighth and sixteenth notes. The bass line provides a steady accompaniment with a mix of eighth and sixteenth notes. The score is marked with a 'p' for piano and a '15' at the end of the first line.

The 'Climax' section of the musical score for 'The Fire of Love' is presented on a grand staff. The treble clef staff contains a melodic line that begins with a series of eighth notes (G4, A4, B4, C5, B4, A4, G4) and then continues with a more complex sequence of eighth and sixteenth notes, including accidentals (sharps and naturals). The bass clef staff provides a harmonic accompaniment, starting with a series of blue eighth notes (F3, G3, A3, B3, C4, B3, A3, G3) and then continuing with a more complex sequence of eighth and sixteenth notes, including accidentals (sharps and naturals). The notation is dense and features many accidentals, indicating a complex harmonic structure.

A musical score for the song "The Rose Tree". The score is written for a single melodic line on a five-line staff. The key signature is one flat (B-flat), and the time signature is 4/4. The melody begins with a treble clef and a key signature of one flat. The first line of the melody is marked with a "15" below it. The melody is composed of eighth and quarter notes, with some notes beamed together. The score includes a repeat sign at the beginning and a double bar line at the end. The lyrics "The Rose Tree" are written below the staff, aligned with the melody.

11a.10



15

15

Musical score for 11a.10, featuring a treble and bass staff. The treble staff begins with a treble clef and a key signature of one flat (B-flat). The bass staff begins with a bass clef and a key signature of one flat (B-flat). The score consists of a continuous melodic line across both staves, starting with a blue highlight on the first few notes of the bass staff. The notation includes various accidentals (sharps, flats, naturals) and a final double bar line.

11a.11



15

15

Musical score for 11a.11, featuring a treble and bass staff. The treble staff begins with a treble clef and a key signature of one flat (B-flat). The bass staff begins with a bass clef and a key signature of one flat (B-flat). The score consists of a continuous melodic line across both staves, starting with a blue highlight on the first few notes of the bass staff. The notation includes various accidentals (sharps, flats, naturals) and a final double bar line.

Modéchelle 11b (-u-uu--u) (8 sons, octaviant)

11 transpositions = 12 expressions

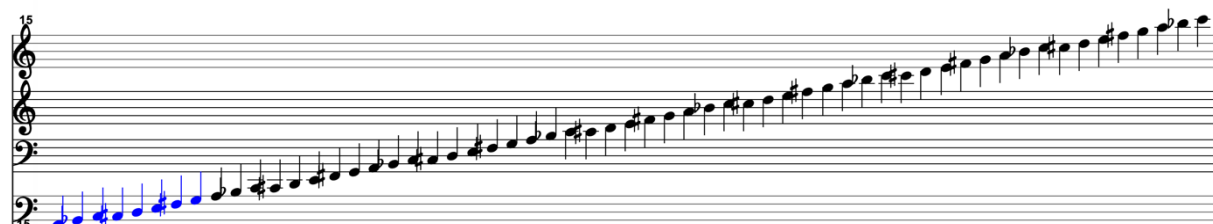
11b.0



11b.1



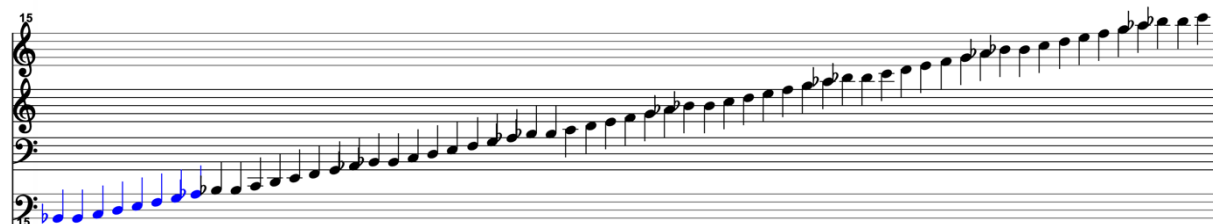
11b.2



11b.3



11b.4



11b.5



11b.6



11b.7



11b.8



11b.9



11b.10



11b.11



Modéchelle 11c (--u-uu-u) (8 sons, octaviant)

11 transpositions = 12 expressions

11c.0

A musical score for three parts: Soprano, Alto, and Bass. The key signature has one flat (B-flat), and the time signature is common time (C). The Soprano part begins with a treble clef and a key signature change from one flat to no flats. The Alto and Bass parts begin with bass clefs and the original one-flat key signature. All three parts feature a melodic line with many accidentals (sharps and naturals) and some blue-colored notes in the lower register. The music is written across five systems of staves.

11c.1

A musical score for the song "The Rose Tree". The score is written for three parts: Soprano, Alto, and Bass. The Soprano part is on a single staff with a treble clef. The Alto and Bass parts are on a grand staff (two staves) with a treble clef for the Alto and a bass clef for the Bass. The key signature is one flat (B-flat), and the time signature is 4/4. The music consists of a single melodic line that ascends steadily from the bottom of the Bass staff to the top of the Soprano staff. The notes are primarily eighth and quarter notes, with some rests. The lyrics "The Rose Tree" are written below the Bass staff, aligned with the notes.

11c.2

A musical score for 'The Great Wall of China' by John Williams. The score is written for three staves: Treble Clef, Bass Clef, and a lower Bass Clef. The key signature is one sharp (F#), and the time signature is 4/4. The melody is primarily in the Treble Clef, with some lower notes in the Bass Clef. The lower Bass Clef staff contains a series of blue notes, likely representing a specific instrument or a harmonic line. The score is marked with a '15' at the beginning of the lower Bass Clef staff.

11c.3

A musical score for the song 'The Rose Tree'. It features three staves: a vocal line at the top, a piano accompaniment line in the middle, and a bass line at the bottom. The vocal line is in treble clef, and the piano/bass lines are in bass clef. The key signature has one flat (B-flat), and the time signature is 4/4. The melody is a simple, catchy tune that repeats twice. The piano accompaniment consists of a steady eighth-note pattern. The bass line follows the same eighth-note pattern as the piano accompaniment. The score is written in a simple, clear font, and the notes are black on a white background.

11c.4

A musical score for the song 'The Rose Tree'. It features three staves: a vocal line (treble clef), a piano accompaniment line (treble clef), and a bass line (bass clef). The key signature has one sharp (F#), and the time signature is 3/4. The melody is a simple, ascending line with a final descending note. The piano accompaniment consists of a steady eighth-note pattern. The bass line provides a simple harmonic foundation.

A musical score for the song 'The Rose Tree'. The score is written on a grand staff with a treble clef on the top staff and a bass clef on the bottom staff. The key signature is one sharp (F#), and the time signature is 4/4. The melody is written in the treble staff, and the bass staff provides a harmonic accompaniment. The score includes a key signature change from one sharp to one flat (Bb) in the middle section. The piece concludes with a final cadence.

[illegible]

A musical score for a piece titled "The Great Wall of China". The score is written for a piano (p) and features a treble and bass staff. The key signature is one sharp (F#), and the time signature is 4/4. The melody is composed of eighth and sixteenth notes, with a steady upward climb. The bass line consists of a series of chords, primarily triads, that follow the harmonic structure of the melody. The score is presented on a single page with a white background and black notation.

A musical score for the song "The Rose Tree". The score is written for a single melodic line on a five-line staff. The key signature is one flat (B-flat), and the time signature is 4/4. The melody begins on a middle C (C4) and ascends stepwise through the scale, with some chromatic alterations (sharps and naturals) in the upper register. The notes are primarily quarter and eighth notes. The score is presented on a single page with a large, decorative initial 'S' at the beginning of the first line.

A musical score for the song 'The Rose Tree'. The score is written for a single melodic line on a five-line staff. The key signature has one flat (B-flat), and the time signature is 4/4. The melody begins on a middle C (C4) and ascends stepwise through the scale, with some intervals of a second and some of a third. The melody is written in a simple, folk-like style. The score includes a treble clef, a key signature of one flat, and a time signature of 4/4. The melody is written on a single staff. The notes are mostly quarter notes, with some eighth notes and some beamed eighth notes. The melody is written in a simple, folk-like style.

11c.10



11c.11



Tableau des intersections entre chacune des transpositions de toutes les modéchelles

0000	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	0016	0017	0018	0019	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	0100	0101	0102	0103	0104	0105	0106	0107	0108	0109	0110	0111	0112	0113	0114	0115	0116	0117	0118	0119	0120	0121	0122	0123	0124	0125	0126	0127	0128	0129	0130	0131	0132	0133	0134	0135	0136	0137	0138	0139	0140	0141	0142	0143	0144	0145	0146	0147	0148	0149	0150	0151	0152	0153	0154	0155	0156	0157	0158	0159	0160	0161	0162	0163	0164	0165	0166	0167	0168	0169	0170	0171	0172	0173	0174	0175	0176	0177	0178	0179	0180	0181	0182	0183	0184	0185	0186	0187	0188	0189	0190	0191	0192	0193	0194	0195	0196	0197	0198	0199	0200	0201	0202	0203	0204	0205	0206	0207	0208	0209	0210	0211	0212	0213	0214	0215	0216	0217	0218	0219	0220	0221	0222	0223	0224	0225	0226	0227	0228	0229	0230	0231	0232	0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247	0248	0249	0250	0251	0252	0253	0254	0255	0256	0257	0258	0259	0260	0261	0262	0263	0264	0265	0266	0267	0268	0269	0270	0271	0272	0273	0274	0275	0276	0277	0278	0279	0280	0281	0282	0283	0284	0285	0286	0287	0288	0289	0290	0291	0292	0293	0294	0295	0296	0297	0298	0299	0300	0301	0302	0303	0304	0305	0306	0307	0308	0309	0310	0311	0312	0313	0314	0315	0316	0317	0318	0319	0320	0321	0322	0323	0324	0325	0326	0327	0328	0329	0330	0331	0332	0333	0334	0335	0336	0337	0338	0339	0340	0341	0342	0343	0344	0345	0346	0347	0348	0349	0350	0351	0352	0353	0354	0355	0356	0357	0358	0359	0360	0361	0362	0363	0364	0365	0366	0367	0368	0369	0370	0371	0372	0373	0374	0375	0376	0377	0378	0379	0380	0381	0382	0383	0384	0385	0386	0387	0388	0389	0390	0391	0392	0393	0394	0395	0396	0397	0398	0399	0400	0401	0402	0403	0404	0405	0406	0407	0408	0409	0410	0411	0412	0413	0414	0415	0416	0417	0418	0419	0420	0421	0422	0423	0424	0425	0426	0427	0428	0429	0430	0431	0432	0433	0434	0435	0436	0437	0438	0439	0440	0441	0442	0443	0444	0445	0446	0447	0448	0449	0450	0451	0452	0453	0454	0455	0456	0457	0458	0459	0460	0461	0462	0463	0464	0465	0466	0467	0468	0469	0470	0471	0472	0473	0474	0475	0476	0477	0478	0479	0480	0481	0482	0483	0484	0485	0486	0487	0488	0489	0490	0491	0492	0493	0494	0495	0496	0497	0498	0499	0500	0501	0502	0503	0504	0505	0506	0507	0508	0509	0510	0511	0512	0513	0514	0515	0516	0517	0518	0519	0520	0521	0522	0523	0524	0525	0526	0527	0528	0529	0530	0531	0532	0533	0534	0535	0536	0537	0538	0539	0540	0541	0542	0543	0544	0545	0546	0547	0548	0549	0550	0551	0552	0553	0554	0555	0556	0557	0558	0559	0560	0561	0562	0563	0564	0565	0566	0567	0568	0569	0570	0571	0572	0573	0574	0575	0576	0577	0578	0579	0580	0581	0582	0583	0584	0585	0586	0587	0588	0589	0590	0591	0592	0593	0594	0595	0596	0597	0598	0599	0600	0601	0602	0603	0604	0605	0606	0607	0608	0609	0610	0611	0612	0613	0614	0615	0616	0617	0618	0619	0620	0621	0622	0623	0624	0625	0626	0627	0628	0629	0630	0631	0632	0633	0634	0635	0636	0637	0638	0639	0640	0641	0642	0643	0644	0645	0646	0647	0648	0649	0650	0651	0652	0653	0654	0655	0656	0657	0658	0659	0660	0661	0662	0663	0664	0665	0666	0667	0668	0669	0670	0671	0672	0673	0674	0675	0676	0677	0678	0679	0680	0681	0682	0683	0684	0685	0686	0687	0688	0689	0690	0691	0692	0693	0694	0695	0696	0697	0698	0699	0700	0701	0702	0703	0704	0705	0706	0707	0708	0709	0710	0711	0712	0713	0714	0715	0716	0717	0718	0719	0720	0721	0722	0723	0724	0725	0726	0727	0728	0729	0730	0731	0732	0733	0734	0735	0736	0737	0738	0739	0740	0741	0742	0743	0744	0745	0746	0747	0748	0749	0750	0751	0752	0753	0754	0755	0756	0757	0758	0759	0760	0761	0762	0763	0764	0765	0766	0767	0768	0769	0770	0771	0772	0773	0774	0775	0776	0777	0778	0779	0780	0781	0782	0783	0784	0785	0786	0787	0788	0789	0790	0791	0792	0793	0794	0795	0796	0797	0798	0799	0800	0801	0802	0803	0804	0805	0806	0807	0808	0809	0810	0811	0812	0813	0814	0815	0816	0817	0818	0819	0820	0821	0822	0823	0824	0825	0826	0827	0828	0829	0830	0831	0832	0833	0834	0835	0836	0837	0838	0839	0840	0841	0842	0843	0844	0845	0846	0847	0848	0849	0850	0851	0852	0853	0854	0855	0856	0857	0858	0859	0860	0861	0862	0863	0864	0865	0866	0867	0868	0869	0870	0871	0872	0873	0874	0875	0876	0877	0878	0879	0880	0881	0882	0883	0884	0885	0886	0887	0888	0889	0890	0891	0892	0893	0894	0895	0896	0897	0898	0899	0900	0901	0902	0903	0904	0905	0906	0907	0908	0909	0910	0911	0912	0913	0914	0915	0916	0917	0918	0919	0920	0921	0922	0923	0924	0925	0926	0927	0928	0929	0930	0931	0932	0933	0934	0935	0936	0937	0938	0939	0940	0941	0942	0943	0944	0945	0946	0947	0948	0949	0950	0951	0952	0953	0954	0955	0956	0957	0958	0959	0960	0961	0962	0963	0964	0965	0966	0967	0968	0969	0970	0971	0972	0973	0974	0975	0976	0977	0978	0979	0980	0981	0982	0983	0984	0985	0986	0987	0988	0989	0990	0991	0992	0993	0994	0995	0996	0997	0998	0999
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

Éric MONTALBETTI

**CATALOGUE DES ARPÈGES RÉGULIERS
ET DES ARPÈGES DÉRIVÉS
DES MODÉCELLES**

Catalogue des arpèges réguliers et dérivés des 18 modéchelles

Modéchelle 0 (gamme chromatique)

(2m / 12 sons / octaviant / 0 permutation / 0 transposition / pas d'arpège dérivé)

Arp 2/2 = gamme par tons (6 sons)



A musical score for the song 'The Rose Tree'. The score is written for three parts: Soprano, Alto, and Bass. The key signature is one flat (B-flat), and the time signature is 4/4. The Soprano part begins with a treble clef and a key signature of one flat. The Alto part begins with a treble clef and a key signature of one flat. The Bass part begins with a bass clef and a key signature of one flat. The lyrics are written below the notes. The score is for the first system, with measures 1 through 15 indicated by a bracket on the left.

A musical score for the song "The Rose Tree". The score is written for two voices, Soprano and Bass, on a grand staff. The key signature is one flat (B-flat), and the time signature is 4/4. The melody is simple and repetitive, with the lyrics "The Rose Tree" written below the notes. The Soprano part starts on a high note and descends, while the Bass part starts on a low note and ascends. The score is presented in a clean, minimalist style with red notes and black lyrics.

[illegible]

Ann 10/10 = 7m x 6 puis cotevent (6 ans)

Ann 11/11 = cycle des 7M (12 ans hors taciture)

Apr 12/12 – Octaves

Arp 12/12 = Octaves

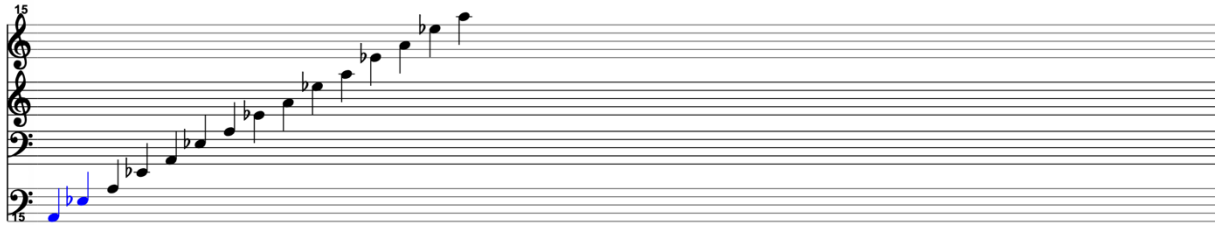
Modéchelle 1 (gamme par tons)

(2M / 6 sons / octaviant / 0 permutation / 1 transposition / pas d'arpège dérivé)

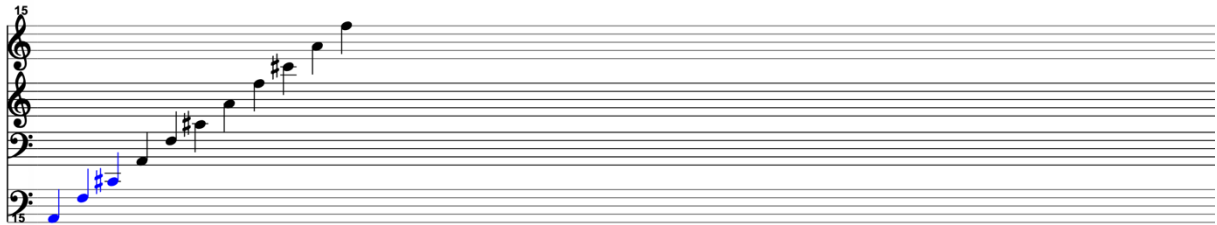
Arp 2/2 = 3M3M3M (3 sons)



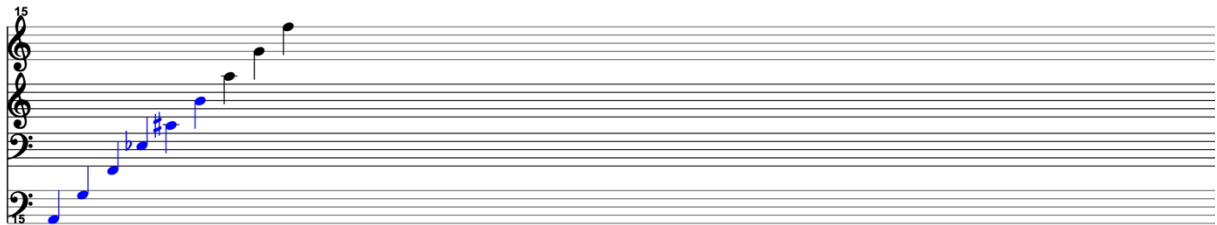
Arp 3/3 = 4+4+(2 sons)



Arp 4/4 = 6m6m6m (3 sons)



Arp 5/5 = 7m x 6 (6 sons)



Arp 6/6 = Octaves

Modéchelle 2 (Messiaen 2)

-u

(3m / 8 sons / octaviant / 1 permutation / 2 transpositions)



Arp 1/2 = (3m 2M 3m 2m) x 4 (puis octaviant) (8 sons)



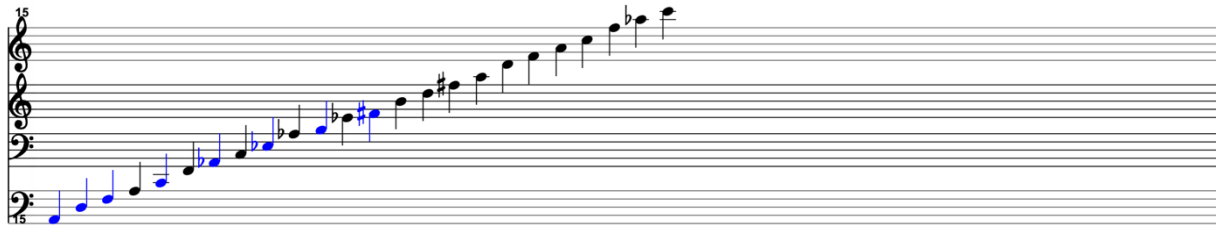
Arp 2/2 = 3m3m3m3m (4 sons, accord de 7ème diminuée)



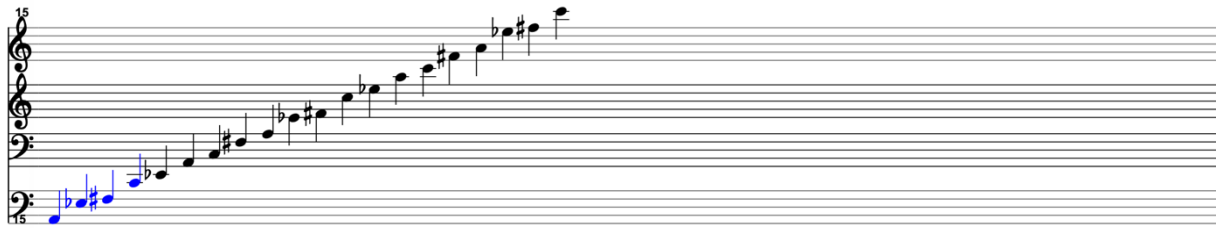
Arp 1/3 = 4J 2m (4 sons)



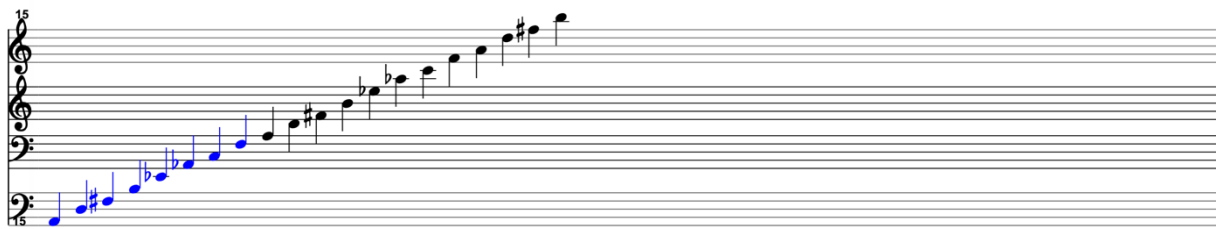
Arp 2/3 = (4J 3m 3M 3m) x 4 (puis octaviant) (8 sons)



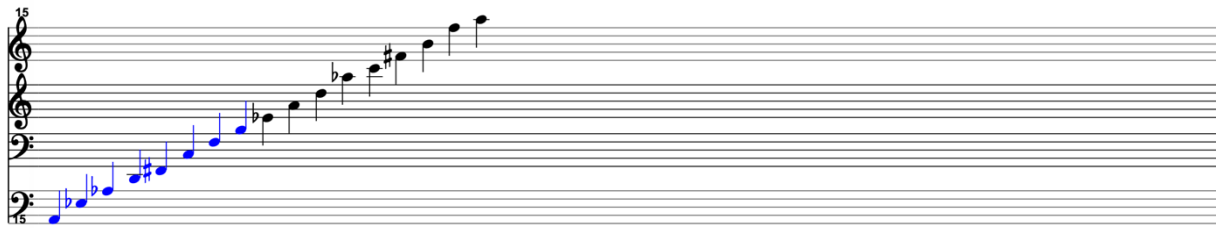
Arp 2/4 = (4+ 3m) x 4 (4 sons ± accord de 7ème diminuée)



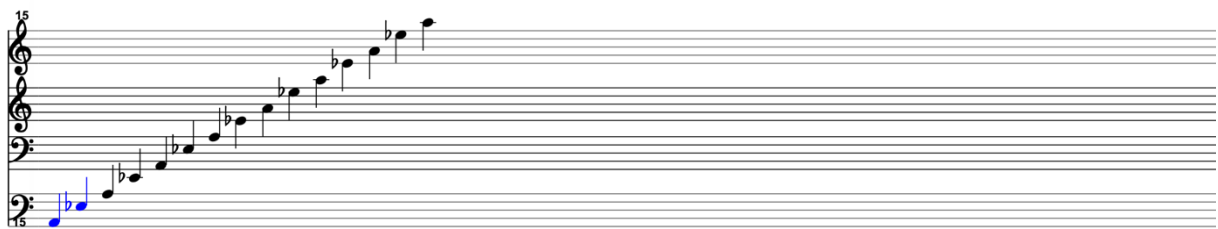
Arp 3/3 = (4J 3M) x 4 (8 sons in a row)



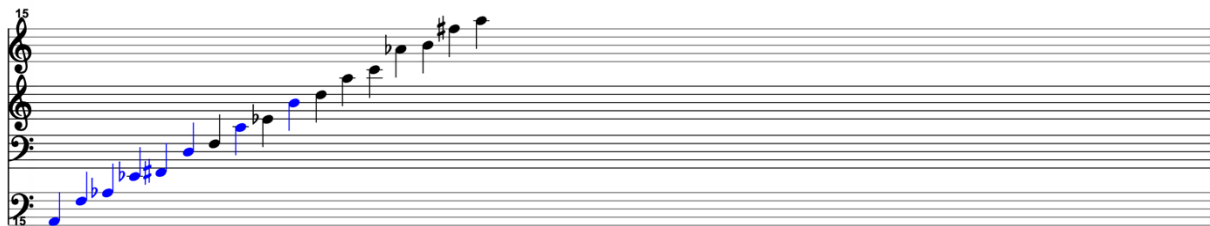
Arp 3/4 = (4+ 4J 4+ 3M) x 4 (sur toute la tessiture) (8 sons in a row)



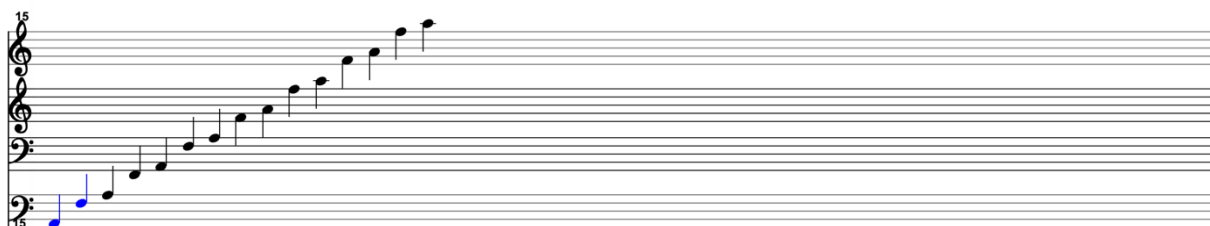
Arp 4/4 = 4+ (2 sons)



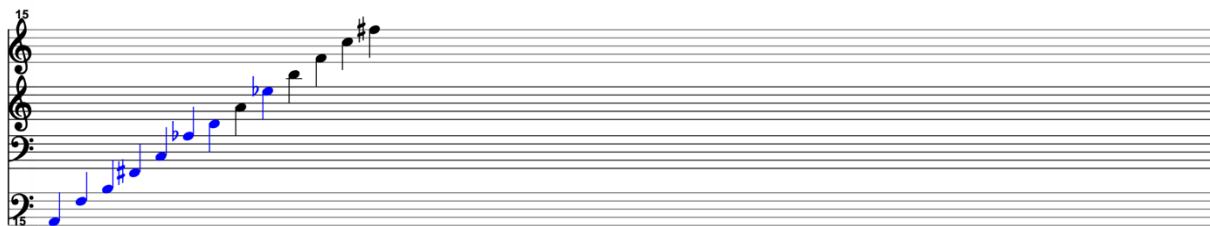
Arp 2/5 = (6m 3m 5J 3m) x 4 sur toute la tessiture (8 sons)



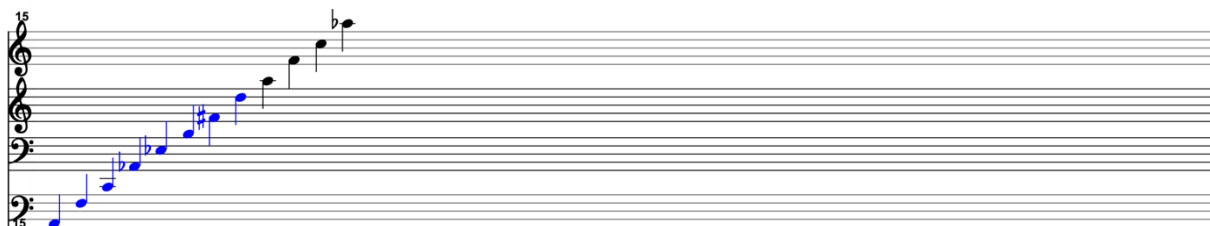
Arp 3/5 = 6m 3M (2 sons)



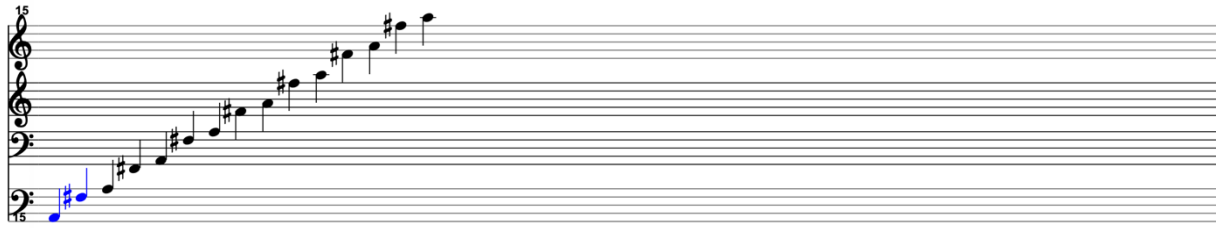
Arp 4/5 = (6m 4+ 5J 4+) x 3 puis hors tessiture (8 sons)



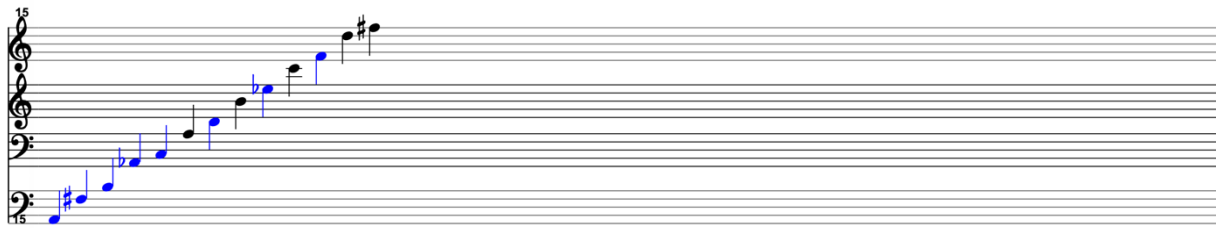
Arp 5/5 = (6m 5J) x 4 (8 sons in a row)



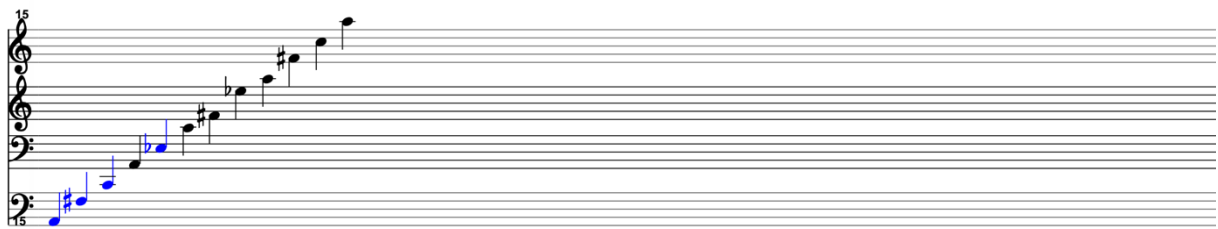
Arp 2/6 = 6M 3m (puis octaviant) (2 sons)



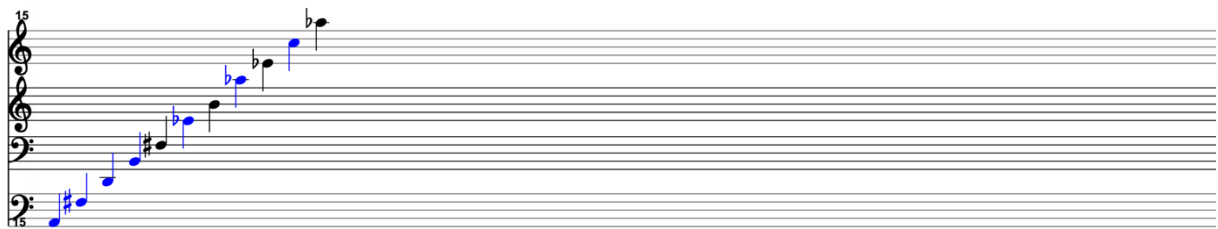
Arp 3/6 = (6M 4J 6M 3M) x 3 puis hors tessiture (8 sons)



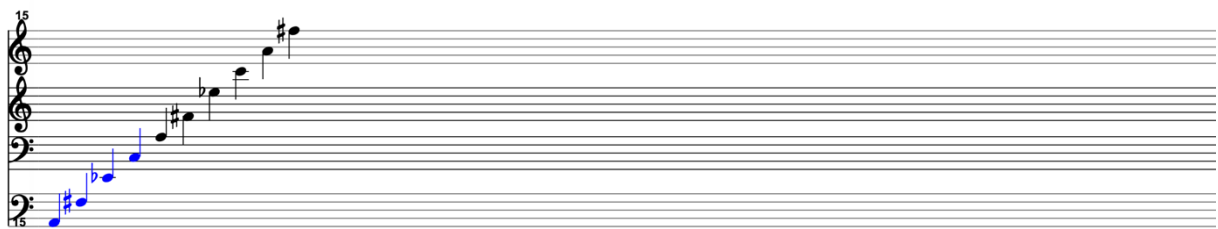
Arp 4/6 = (6M 4+) x 4 (puis octaviant) (4 sons, ± accord de 7ème diminuée)



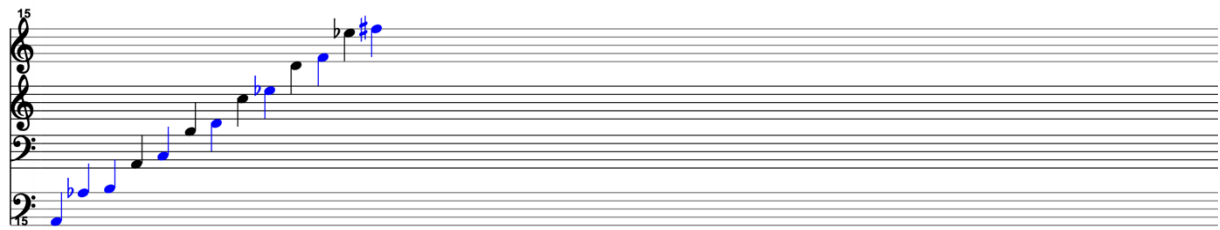
Arp 5/6 = 6M6m6M5J x 2,5 (7 sons puis hors tessiture)



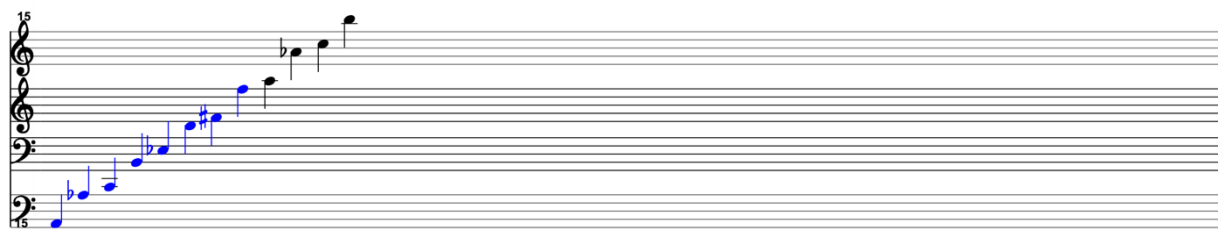
Arp 6/6 (4 sons, ± accord de 7ème diminuée)



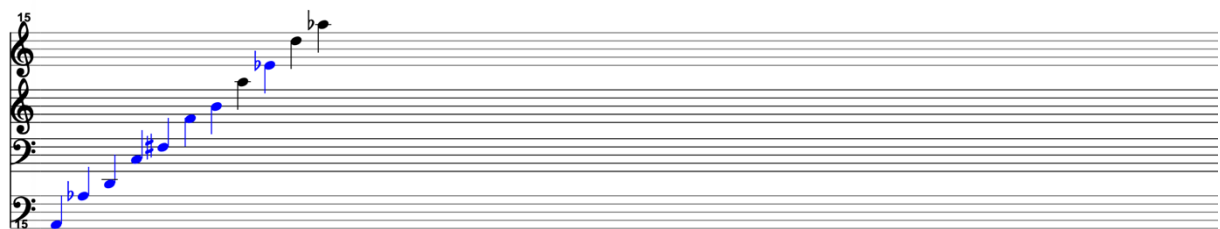
Arp 2/7 (7M3m7m3m x 3) (8 sons)



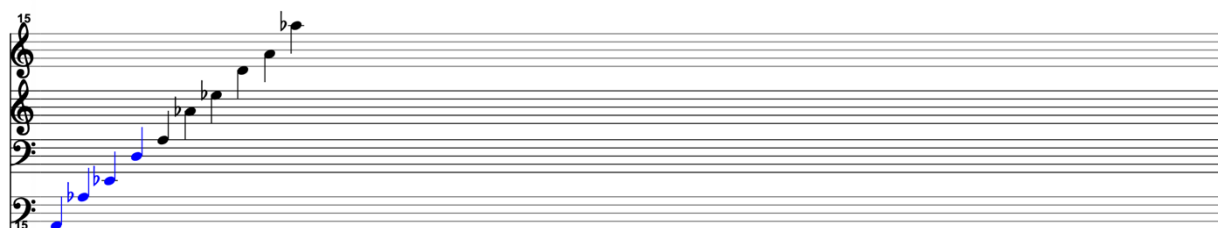
Arp 3/7 (7M3M x 5,5) (8 sons in a row)



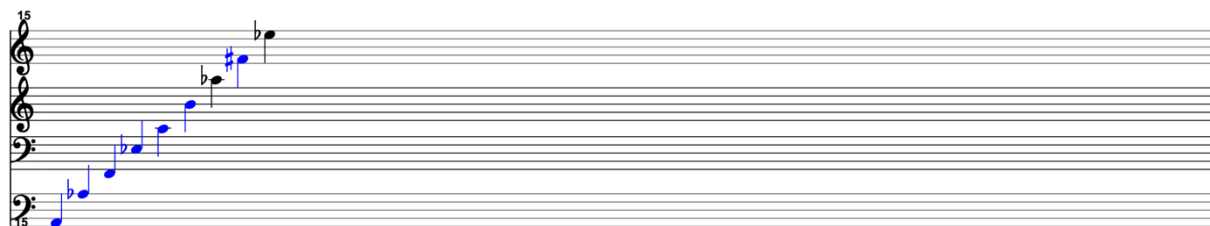
Arp 4/7 (7M4+7m4+ x 2,5) (8 sons)



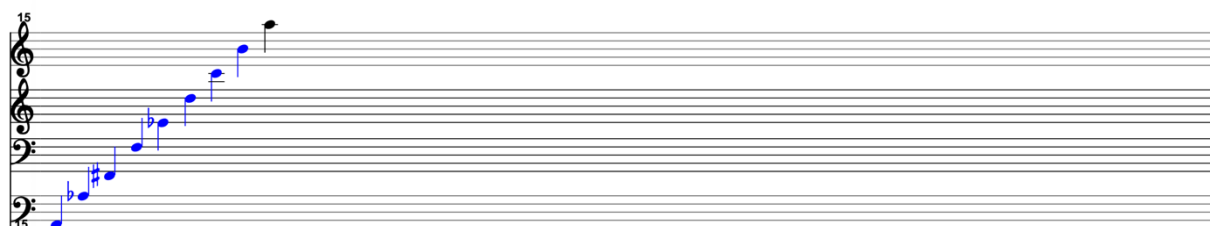
Arp 5/7 (4 sons)



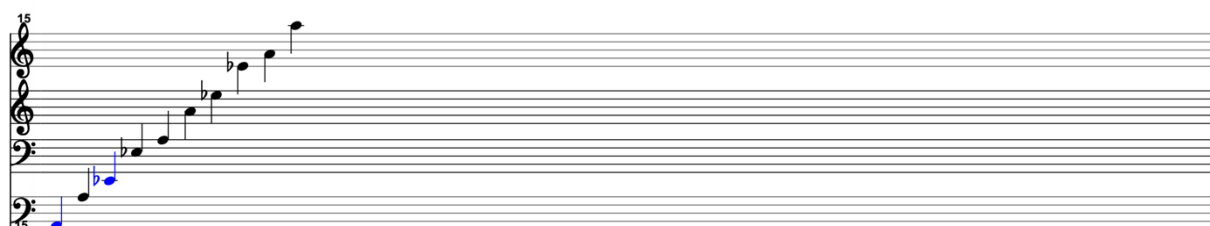
Arp 6/7 (7M6M7m6M x 2) (7 sons)



Arp 7/7 (8 sons in a row)



Arp 4/8 (8J4+) (2 sons)



Arp 8/8 = octaves

Modéchelle 3 (Messiaen 3)

-uu

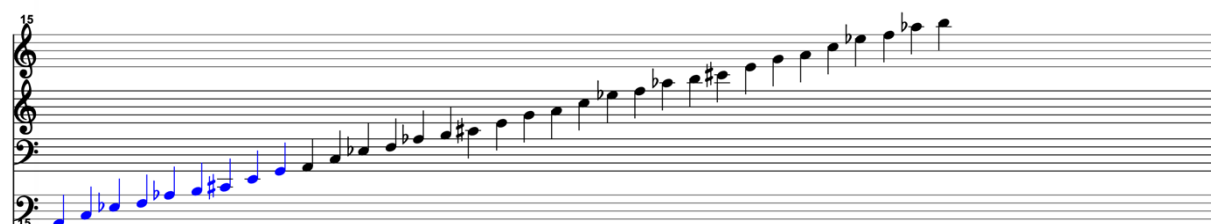
(3M / 9 sons / octaviant / 2 permutations / 3 transpositions)



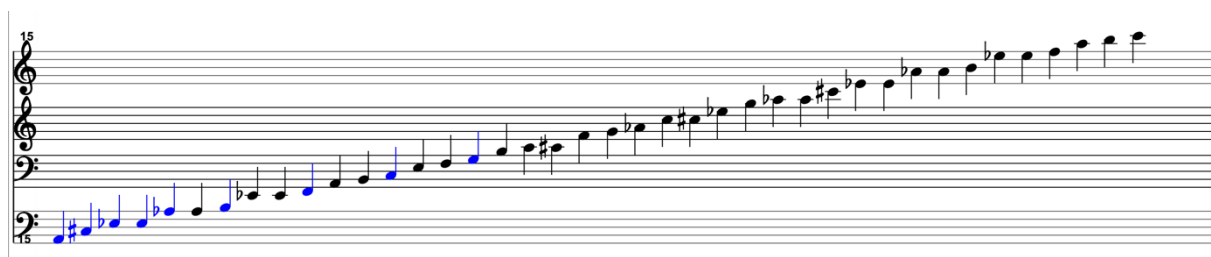
Arp 1/2 (9 sons = 8 in a row + 1)



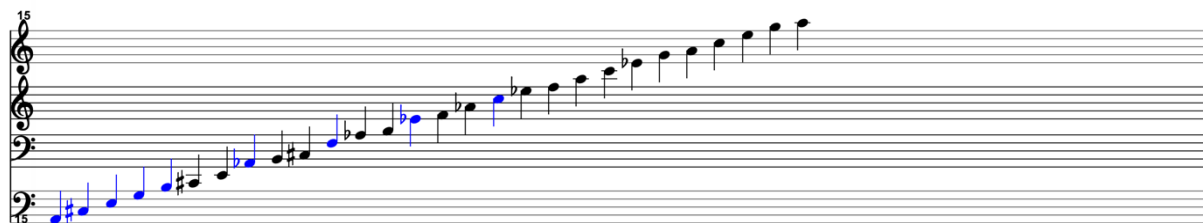
Arp 2/2 (9 sons in a row)



Arp 1/3 (9 sons)



Arp 2/3 (9 sons)



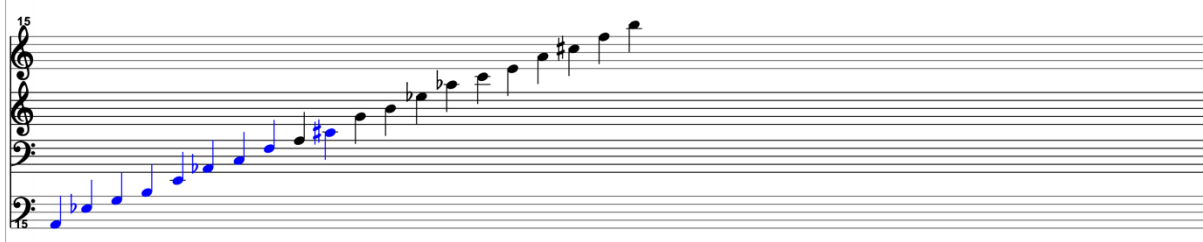
Arp 2/4 (9 sons = 8 in a row + 1)



Arp 3/3 (3 sons, accord 5+)



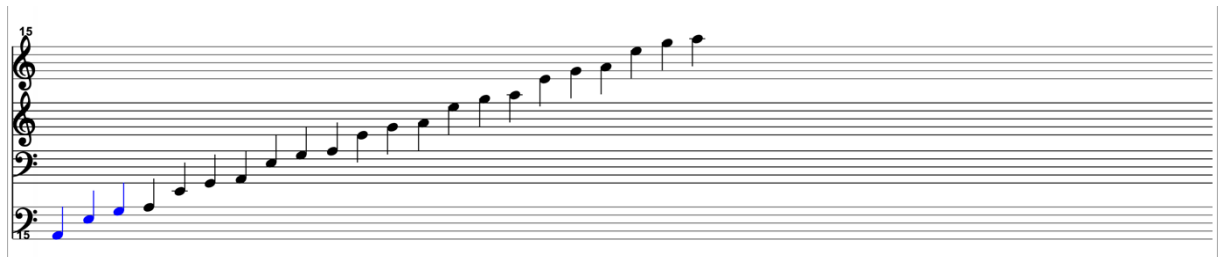
Arp 3/4 (9 sons = 8 in a row + 1)



Arp 4/4 (9 sons in a row)



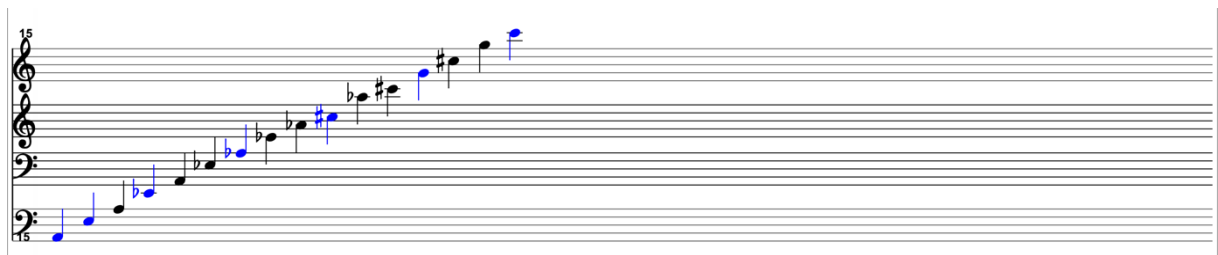
Arp 2/5 (5J3m2M, 3 sons)



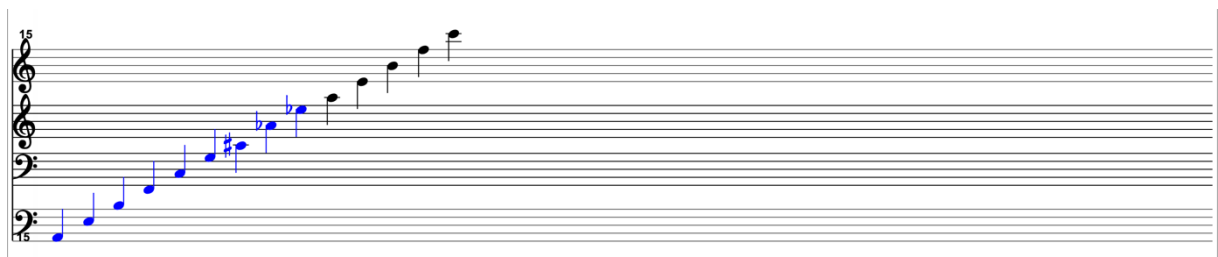
Arp 3/5 (9 sons = 7 in a row + 2)



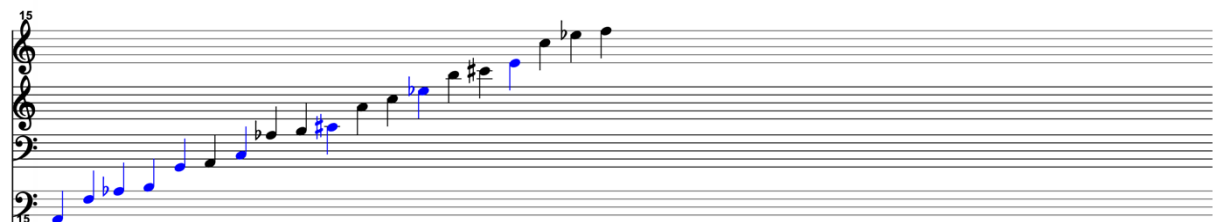
Arp 4/5 (7 sons)



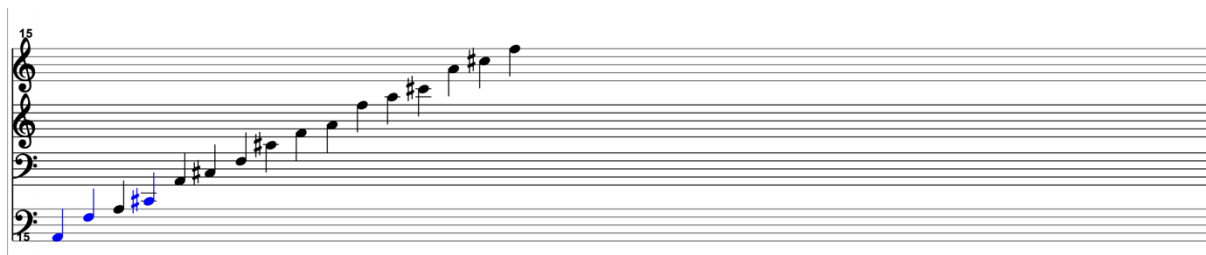
Arp 5/5 (9 sons in a row)



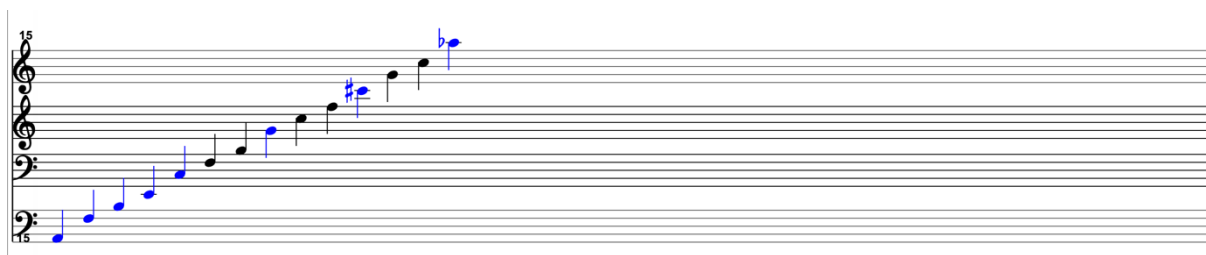
Arp 2/6 (9 sons)



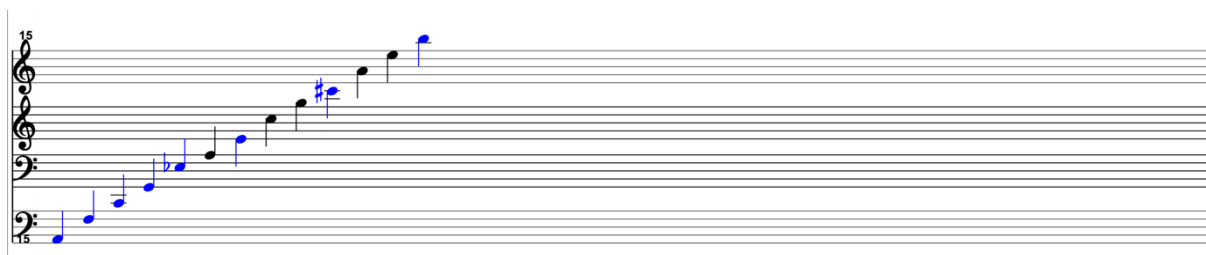
Arp 3/6 (6m3M3M, 3 sons)



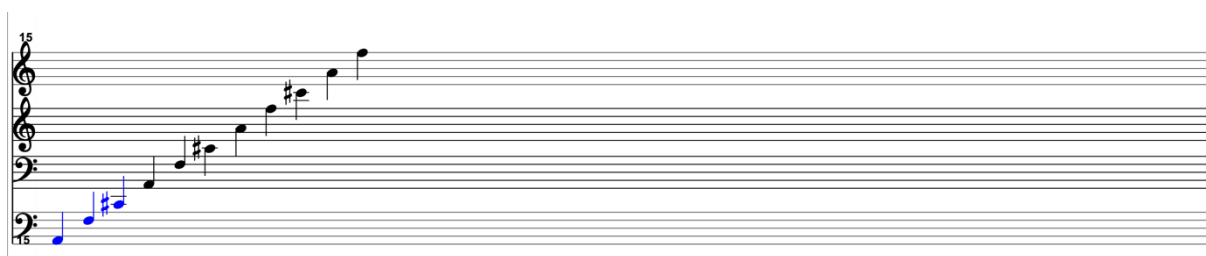
Arp 4/6 (8 sons)



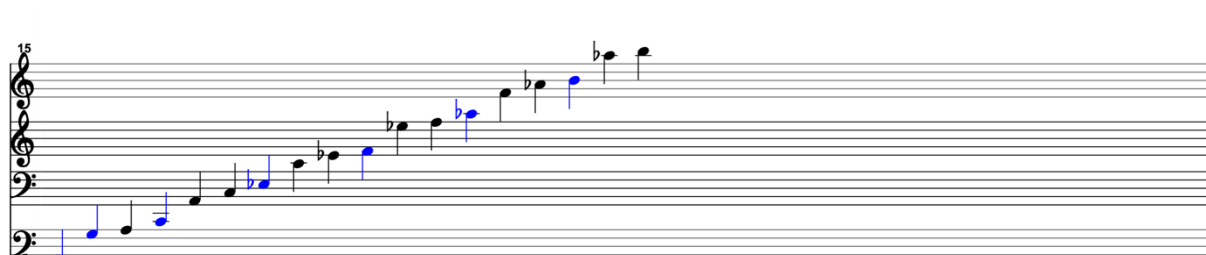
Arp 5/6 (8 sons)



Arp 6/6 (6m, 3 sons)



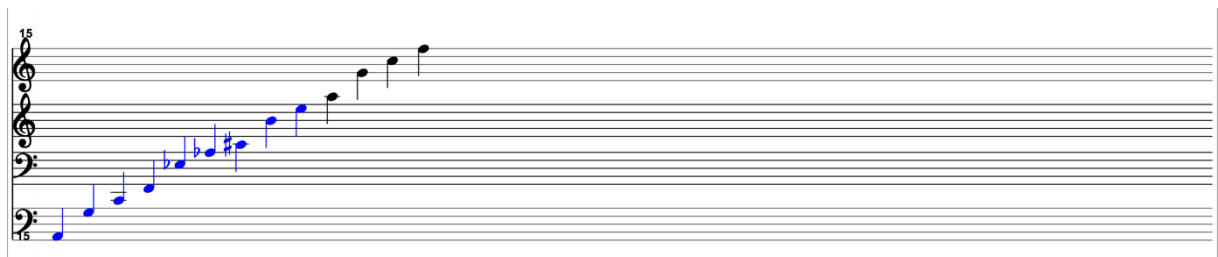
Arp 2/7 (7 sons)



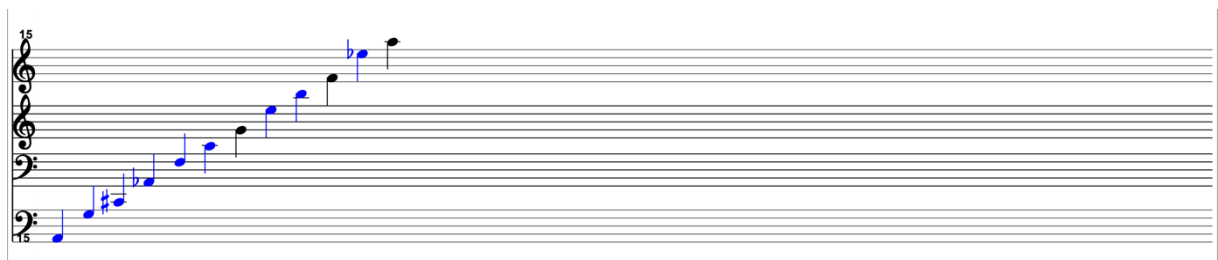
Arp 3/7 (9 sons = 8 in a row + 1)



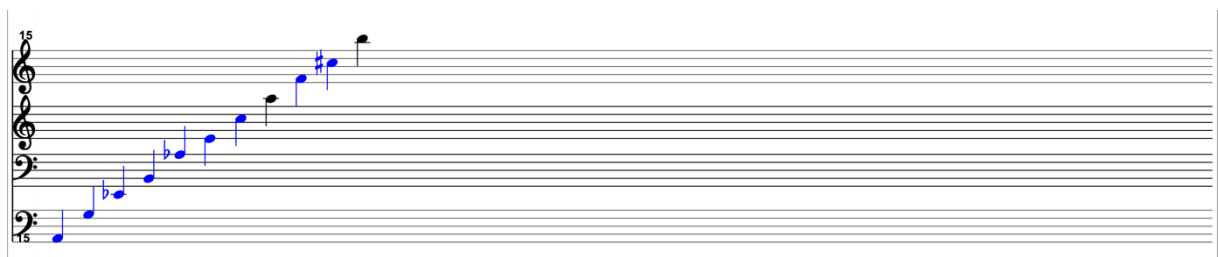
Arp 4/7 (9 sons in a row)



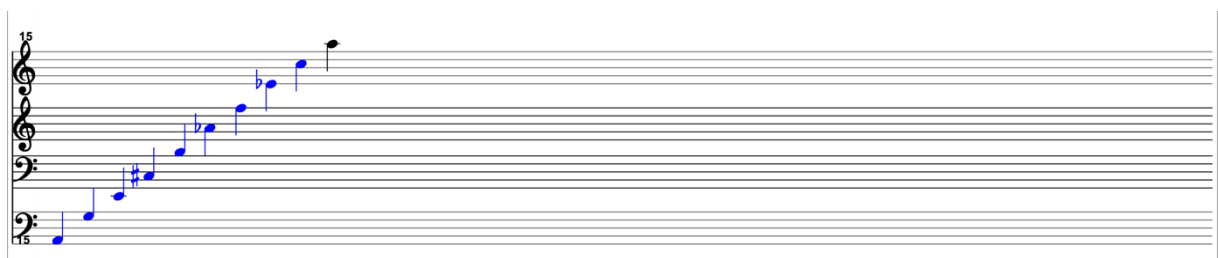
Arp 5/7 (9 sons)



Arp 6/7 (9 sons = 7 in a row + 2)



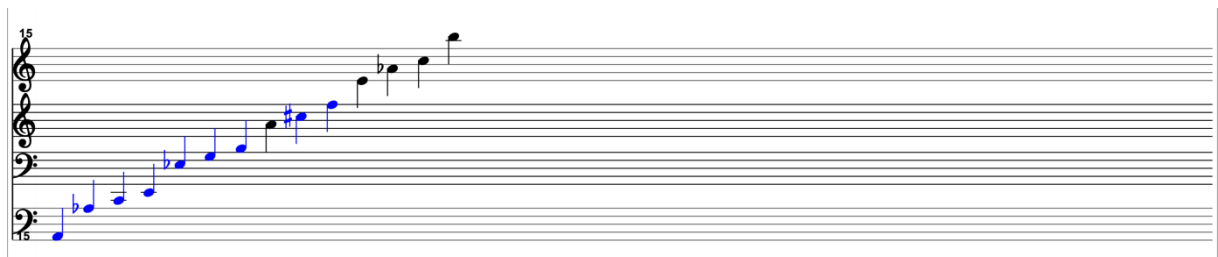
Arp 7/7 (9 sons in a row)



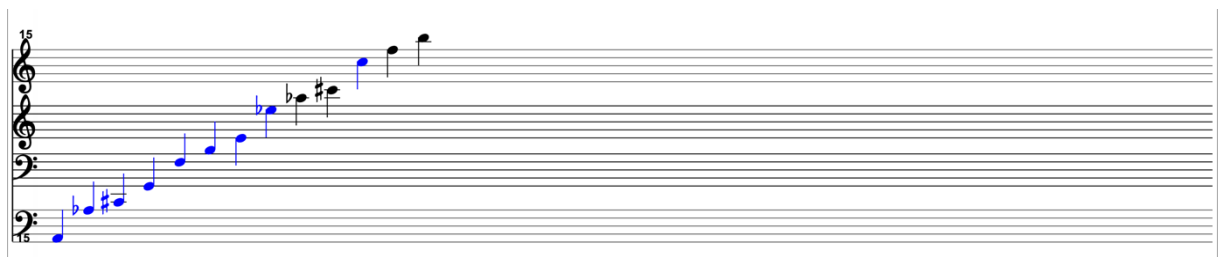
Arp 2/8 (9 sons in a row)



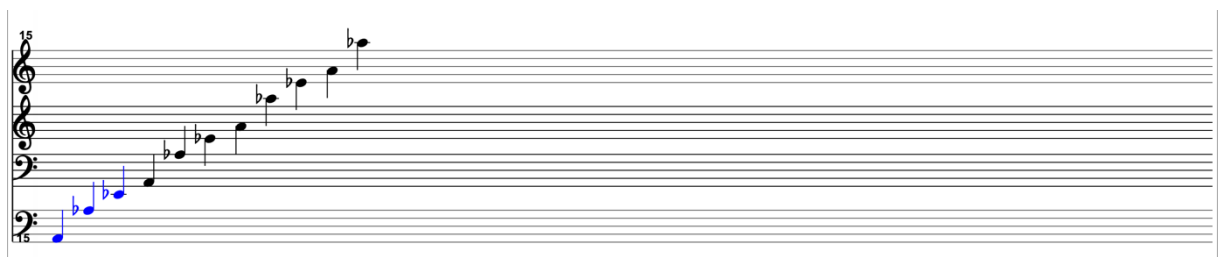
Arp 3/8 (9 sons = 7 in a row + 2)



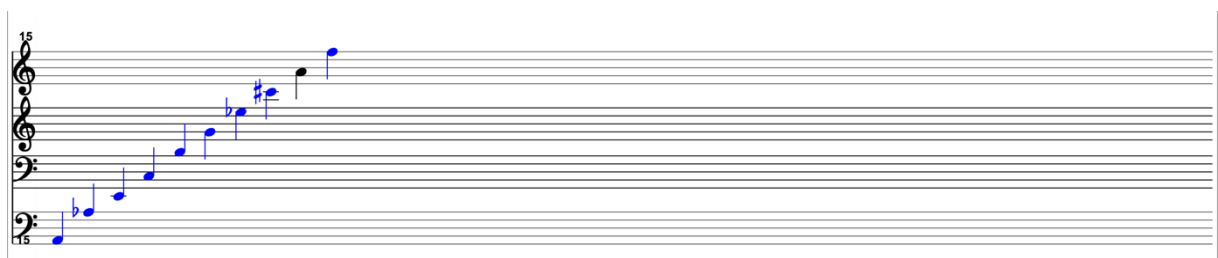
Arp 4/8 (9 sons = 8 in a row + 1)



Arp 5/8 (7M5J4+, 3 sons)



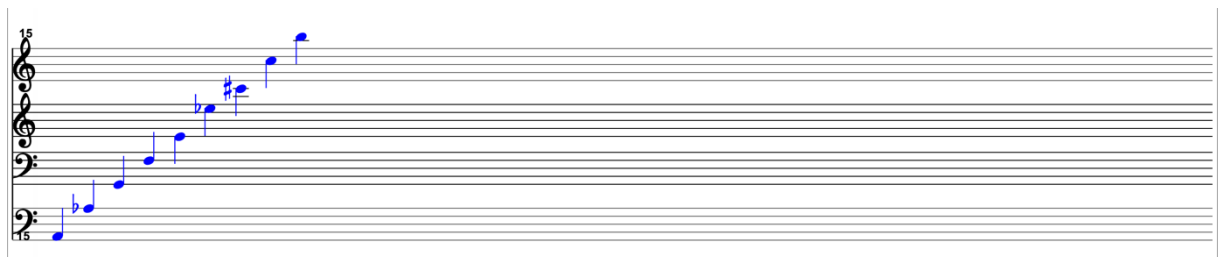
Arp 6/8 (9 sons = 8 in a row + 1)



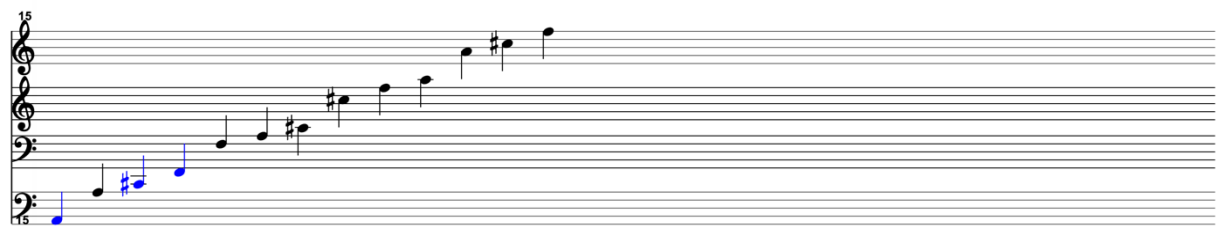
Arp 7/8 (8 sons)



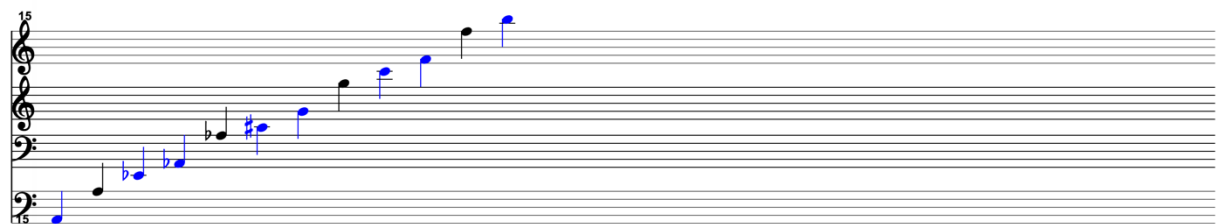
Arp 8/8 (9 sons)



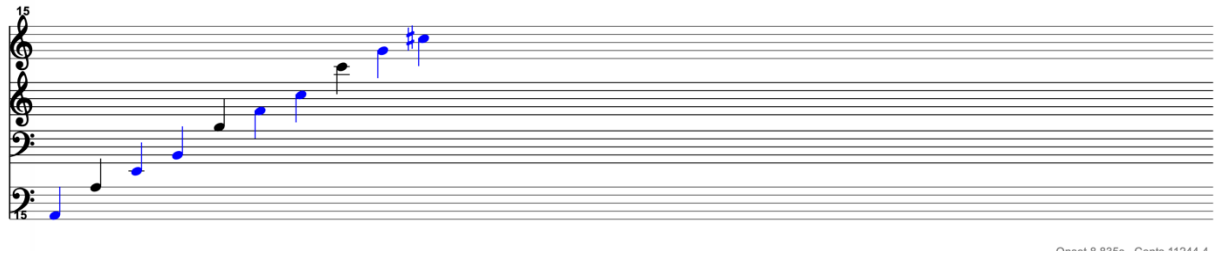
Arp 3/9 (3 sons)



Arp 4/9 (8 sons)

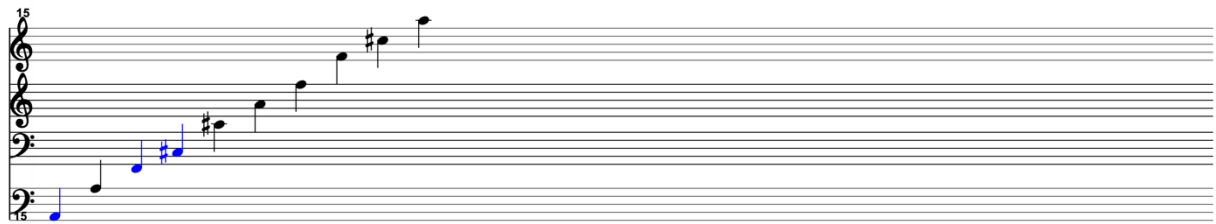


Arp 5/9 (7 sons)



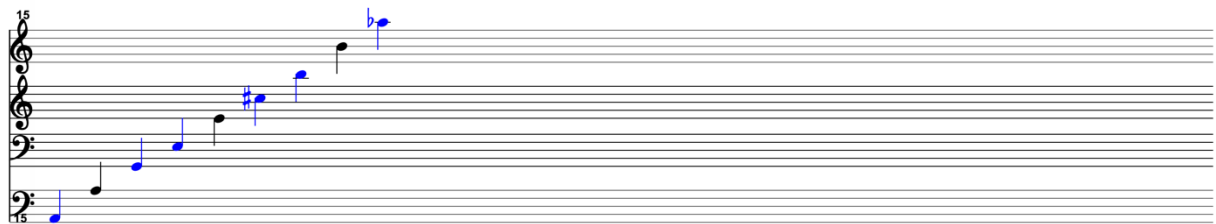
Parent 5 595- Penta 45954 4

Arp 6/9 (3 sons)



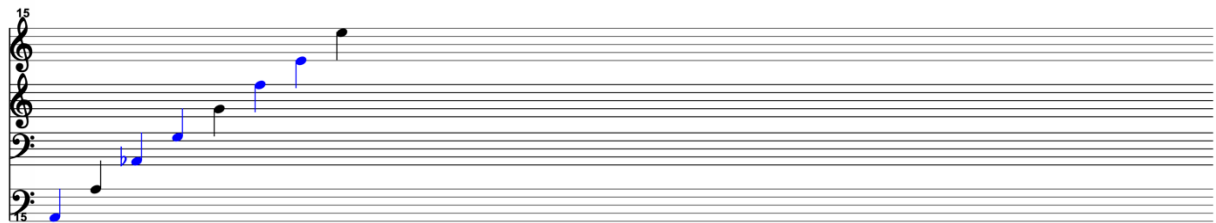
Parent 44 245- Penta 45955 5

Arp 7/9 (6 sons)



Parent 45 355- Penta 45956 6

Arp 8/9 (5 sons)



Arp 9/9 = octaves

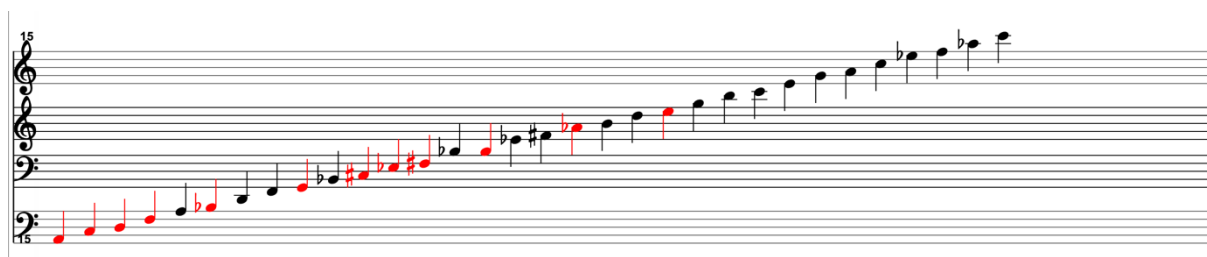
Modéchelle 4 (crétique)

-U-

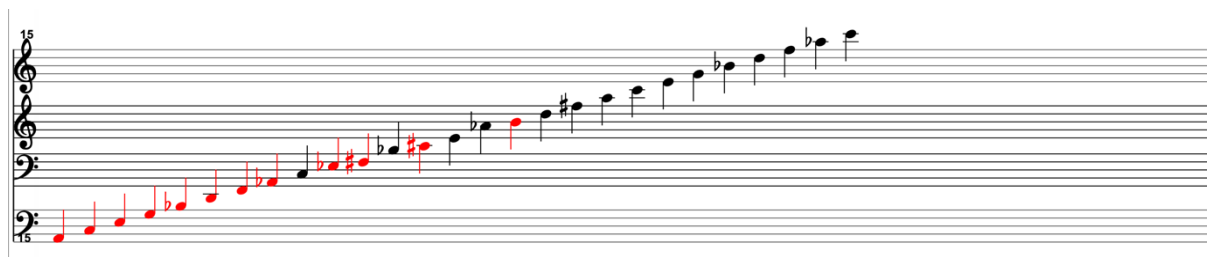
(4J / 7 à 12 sons / 5 octaves / 2 permutations / 4 transpositions)



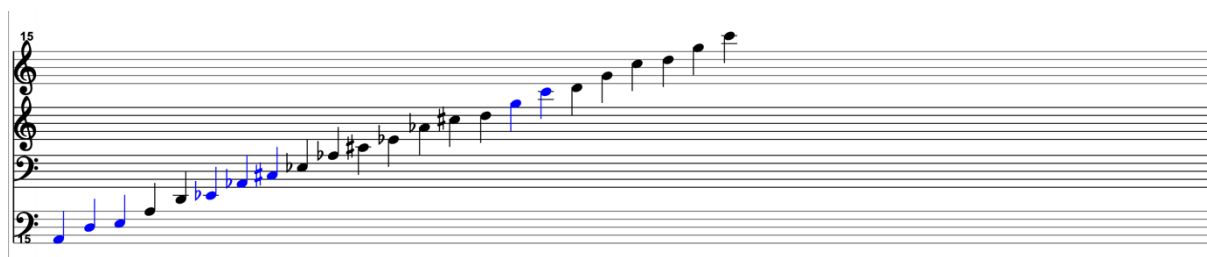
Arp 1/2 (12 sons)



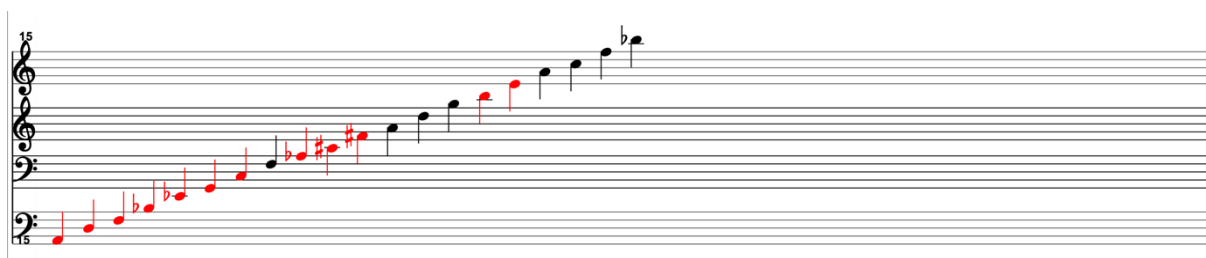
Arp 2/2 (12 sons)



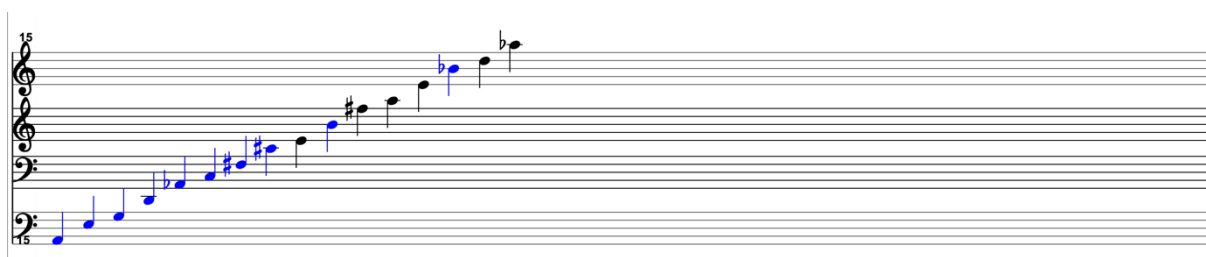
Arp 1/3 (8 sons)



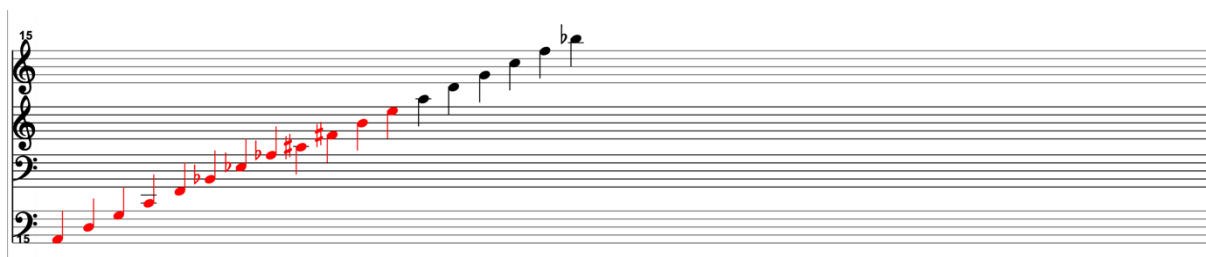
Arp 2/3 (12 sons)



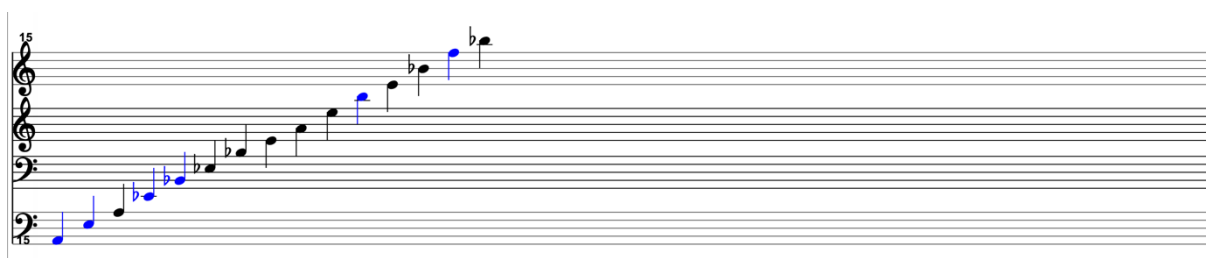
Arp 2/4 (10 sons)



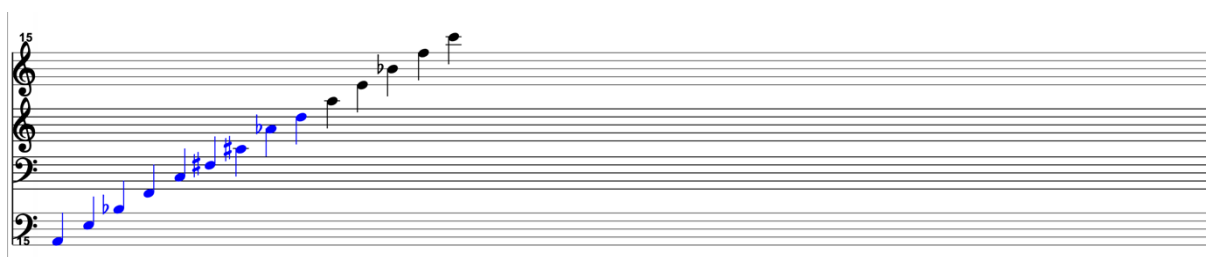
Arp 3/3 (12 sons in a row)



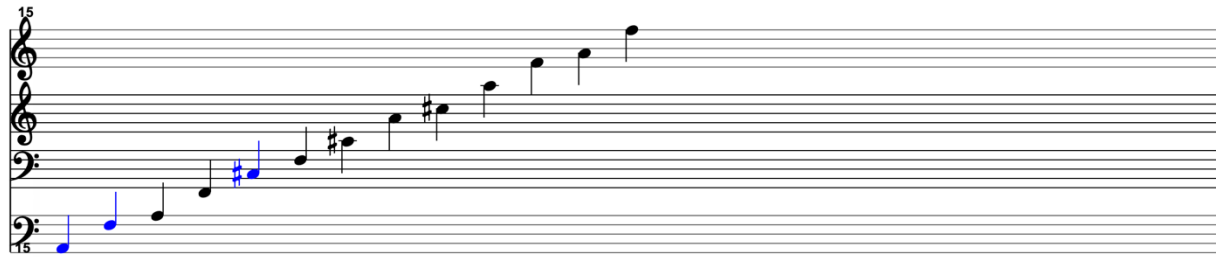
Arp 3/4 (6 sons)



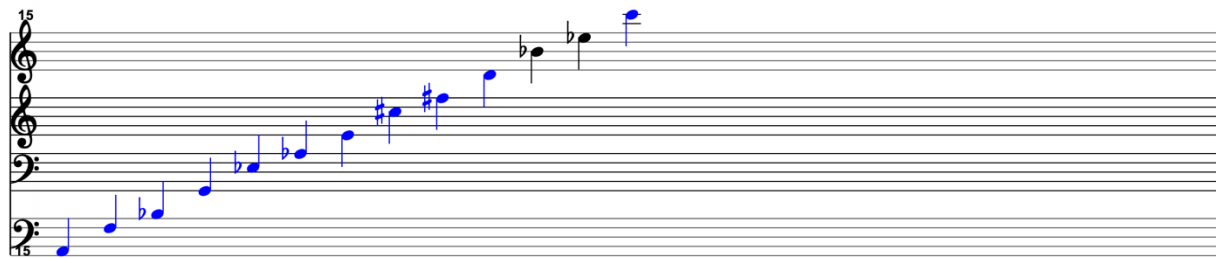
Arp 4/4 (9 sons in a row)



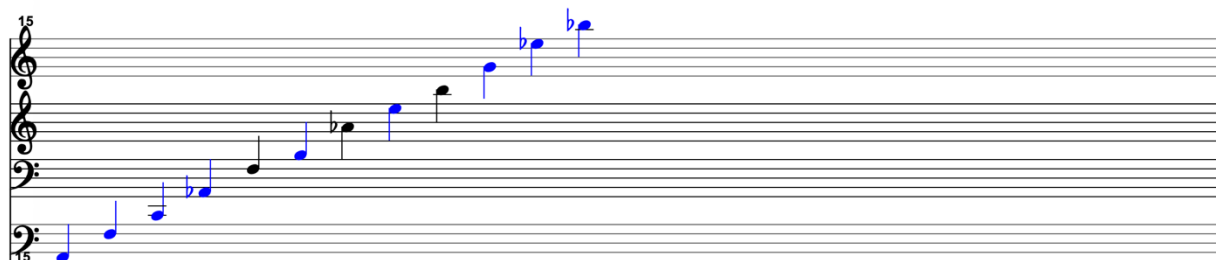
Arp 2/5 (6m3M6m, 3 sons)



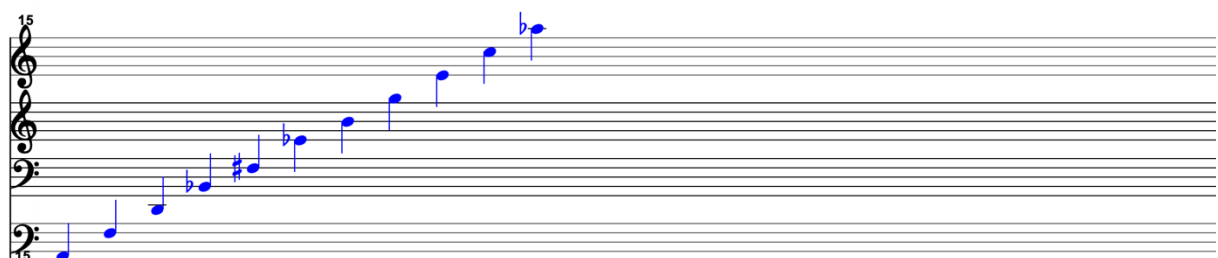
Arp 3/5 (11 sons = 10 in a row + 1)



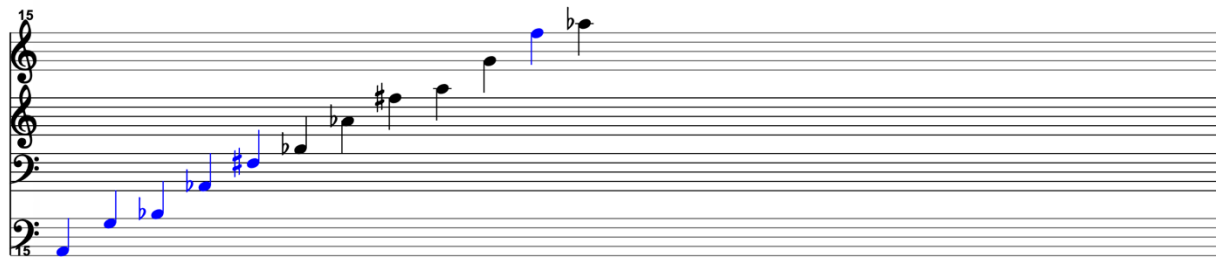
Arp 4/5 (8 sons)



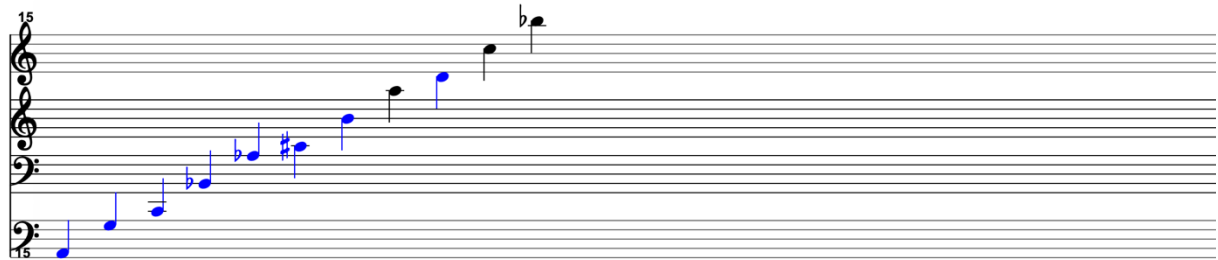
Arp 5/5 (11 sons in a row)



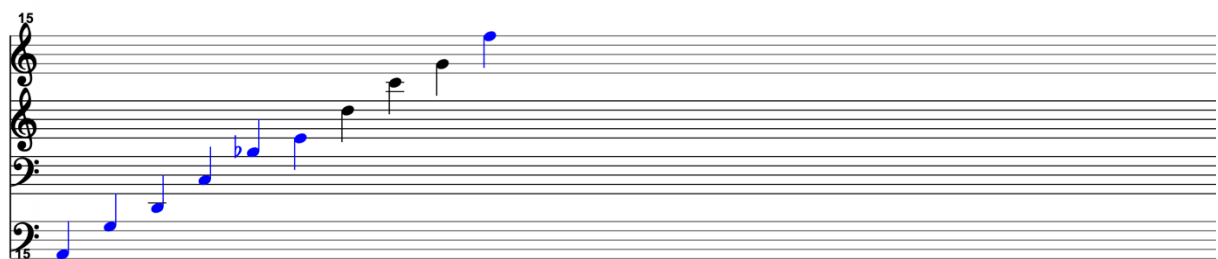
Arp 2/6 (6 sons = 5 in a row + 1)



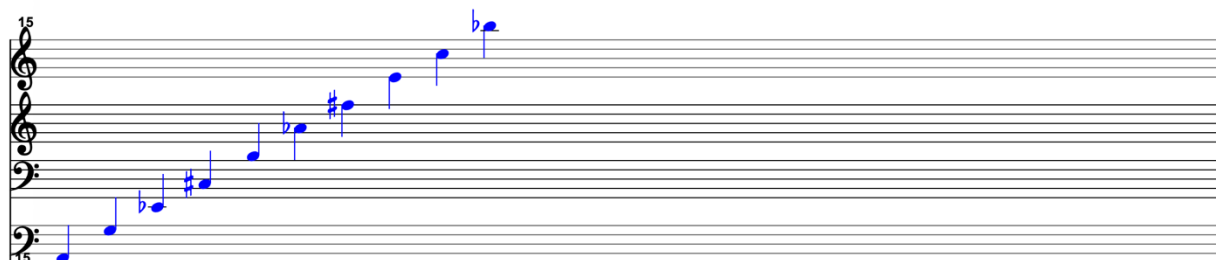
Arp 3/6 (8 sons = 7 in a row + 1)



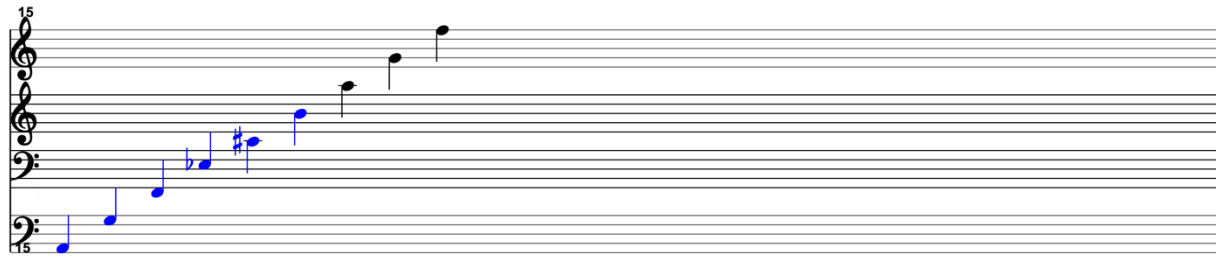
Arp 4/6 (7 sons = 6 in a row + 1)



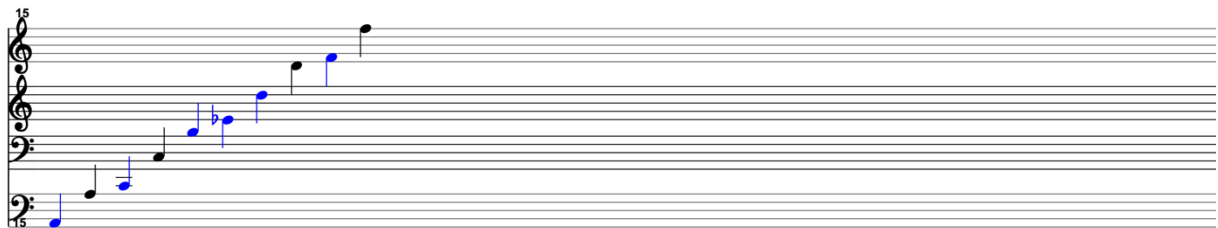
Arp 5/6 (10 sons in a row)



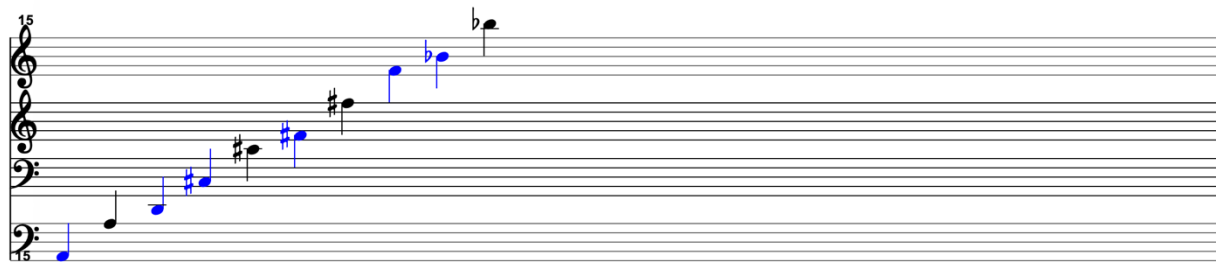
Arp 6/6 (6 sons in a row)



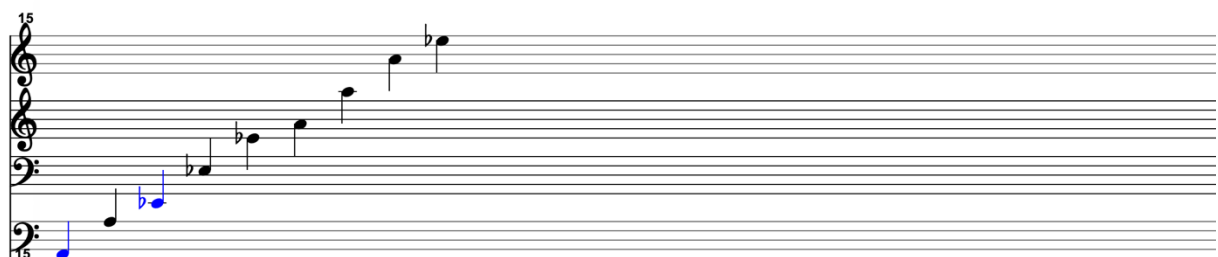
Arp 2/7 (7 sons)



Arp 3/7 (6 sons)



Arp 4/7 (8J4+8J, 2 sons)

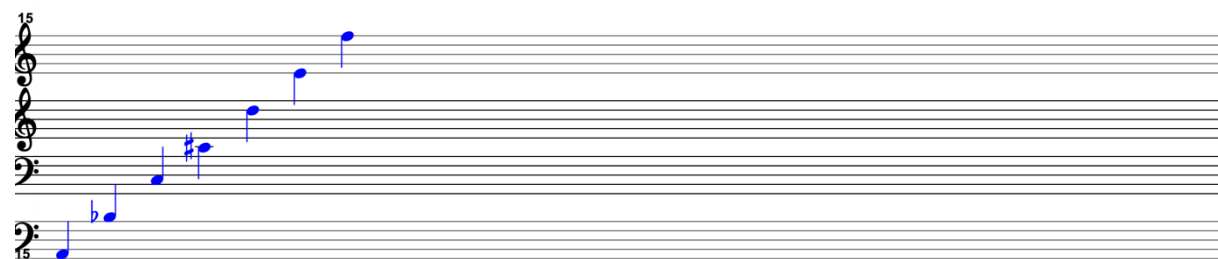


A musical score consisting of three staves. The top staff has a treble clef and a key signature of one flat (B-flat). It contains a sequence of notes: G4 (black), A4 (blue), B4 (black), C5 (blue), D5 (black), E5 (blue), F#5 (black), G5 (blue), A5 (black), Bb5 (blue), and C6 (black). The middle staff has a treble clef and contains a single blue note, G4. The bottom staff has a bass clef and contains a single blue note, G2. There are measure rests indicated by vertical lines between the notes in each staff.

The image shows a musical score for the song "The Rose Tree". It consists of three staves. The top staff is a vocal line in treble clef, starting on a whole note G4 and moving up stepwise to a whole note B4. The middle staff is a piano accompaniment in treble clef, starting with a quarter note G4, followed by eighth notes A4 and B4, and then a quarter note C5. The bottom staff is a piano accompaniment in bass clef, starting with a quarter note G3, followed by eighth notes F3 and E3, and then a quarter note D3. The key signature has one sharp (F#), and the time signature is 4/4.

[illegible][illegible]

Arp 8/8 (non octaviant, plus grand que l'octave car modéchelle de 7 sons ab initio)



Modéchelle 5 (Choriambe = Messiaen 6)

-uu-

(4+ / 8 sons / octaviant / 3 permutations / 5 transpositions)



Arp 1/2 (8 sons)



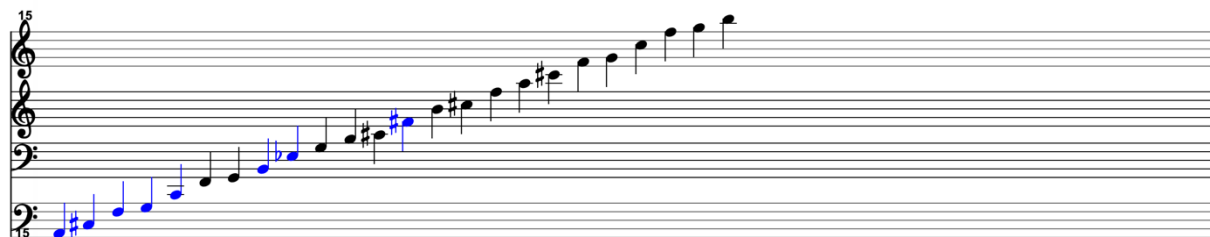
Arp 2/2 (4 sons, 7ème diminuée)



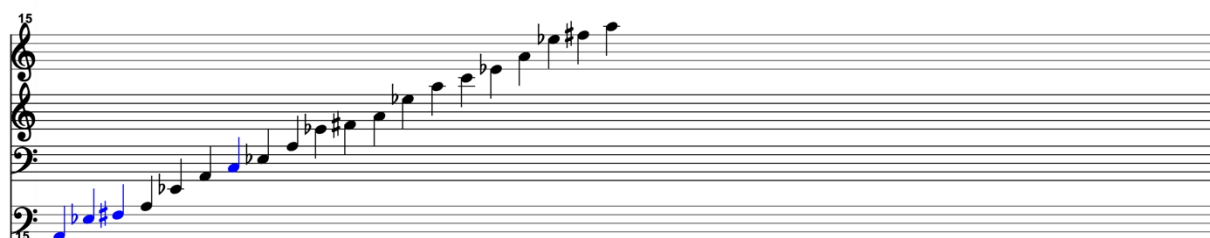
Arp 1/3 (3M2M2M3M, 4 sons)



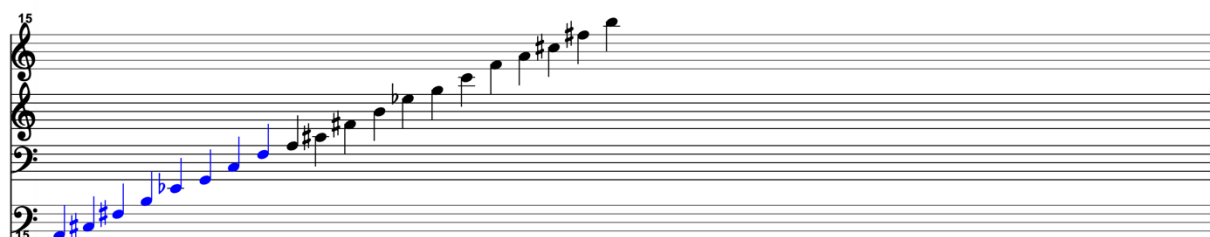
Arp 2/3 (8 sons)



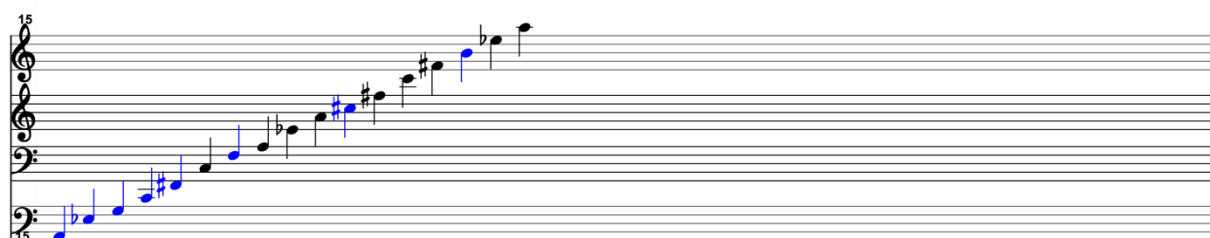
Arp 2/4 (4 sons, ± 7ème diminuée)



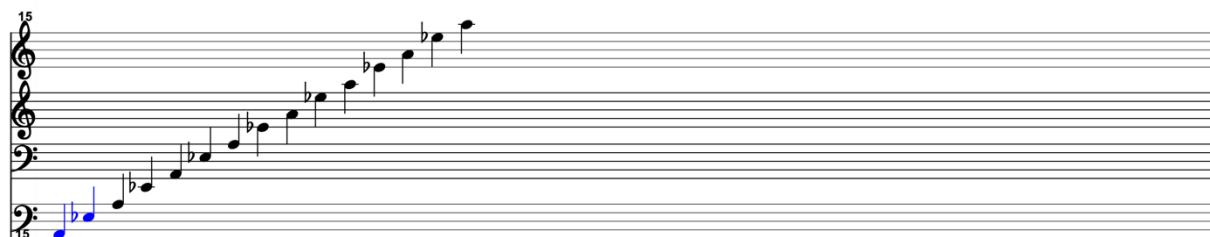
Arp 3/3 (8 sons in a row)



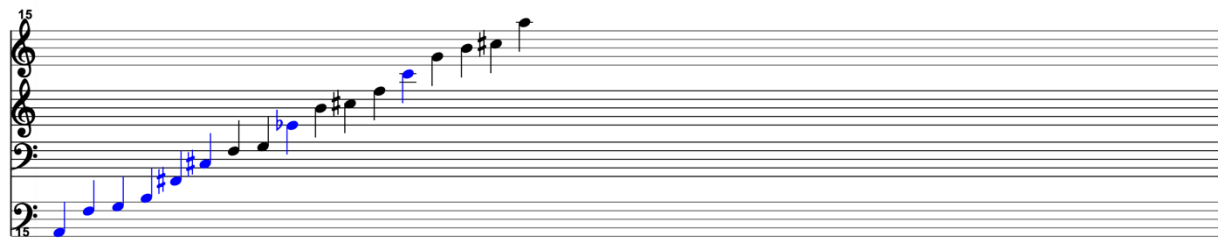
Arp 3/4 (8 sons)



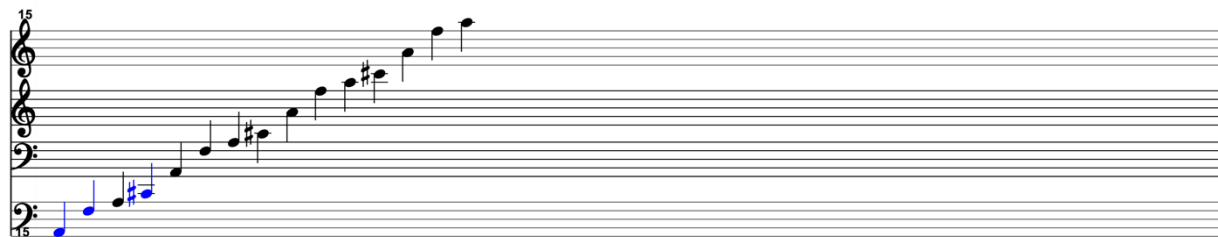
Arp 4/4 (4+, 2 sons)



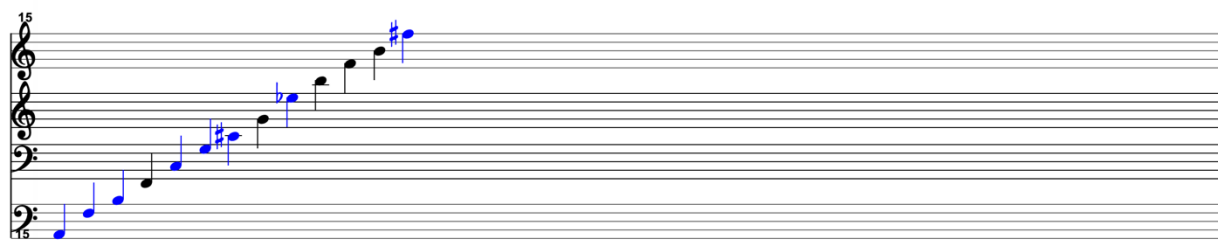
Arp 2/5 (8 sons)



Arp 3/5 (6m3M3M6m, 3 sons)



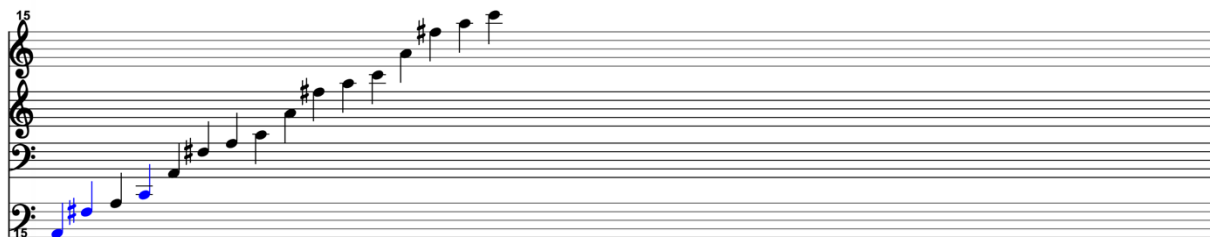
Arp 4/5 (8 sons)



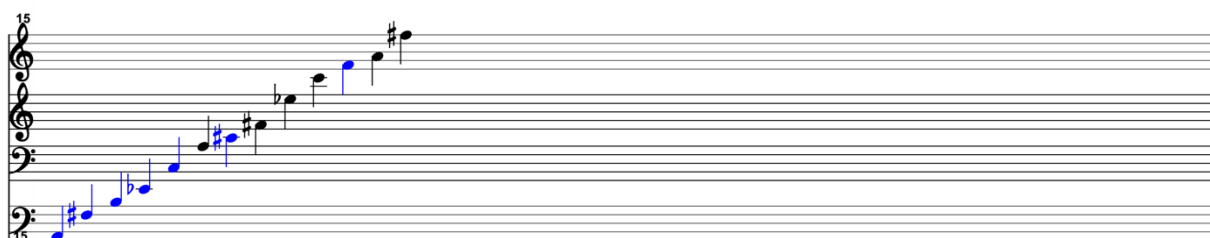
Arp 5/5 (8 sons)



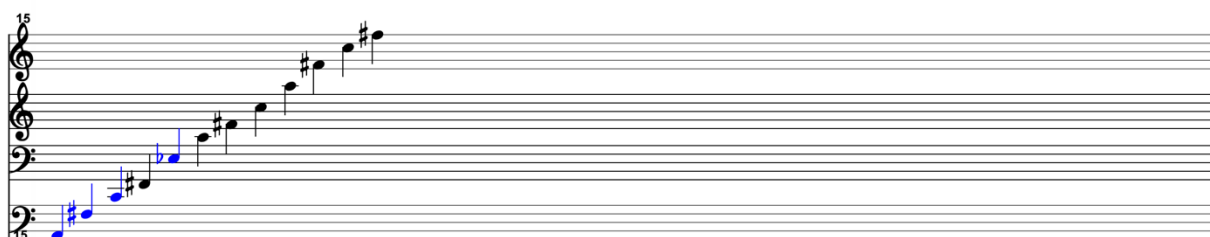
Arp 2/6 (6M3m3m6M, 3 sons)



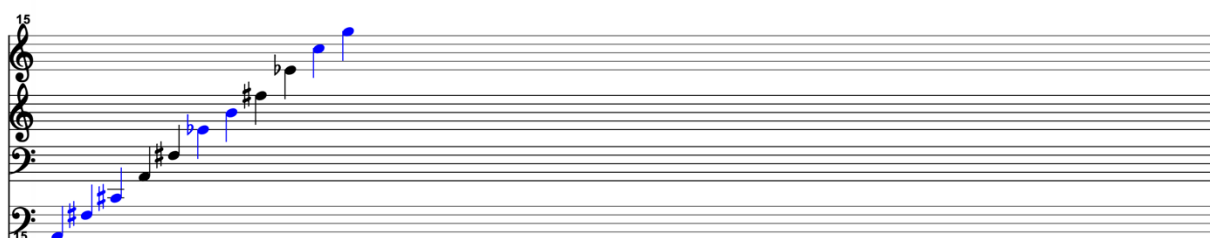
Arp 3/6 (7 sons)



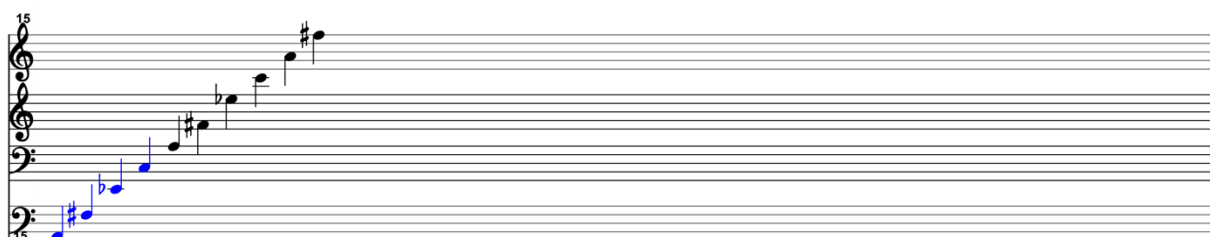
Arp 4/6 (4 sons, ± 7ème diminuée)



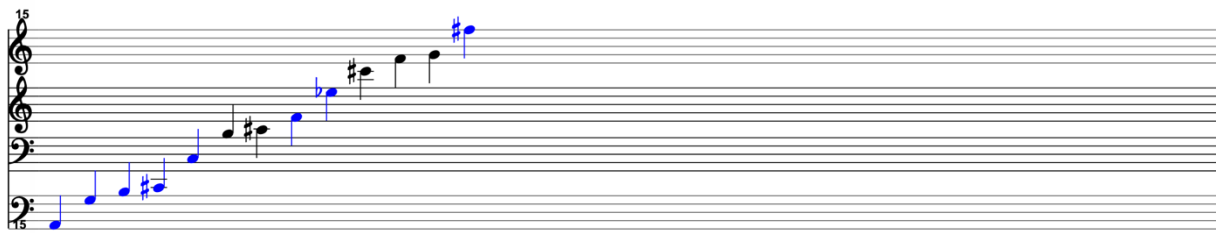
Arp 5/6 (7 sons)



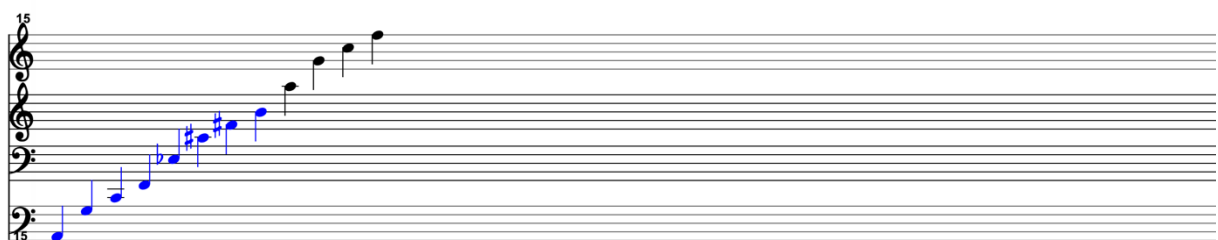
Arp 6/6 (4 sons, ± 7ème diminuée)



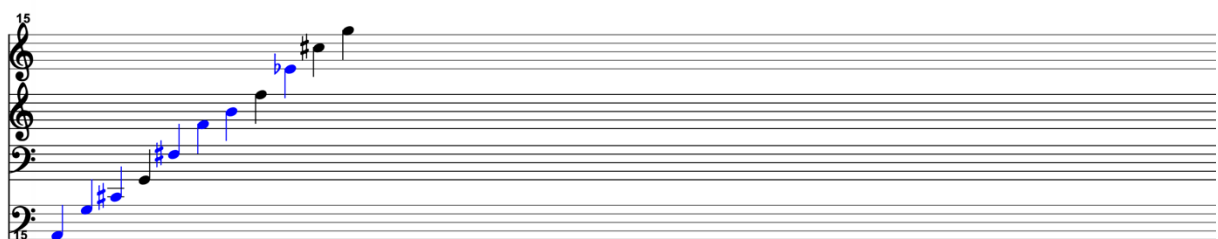
Arp 2/7 (8 sons)



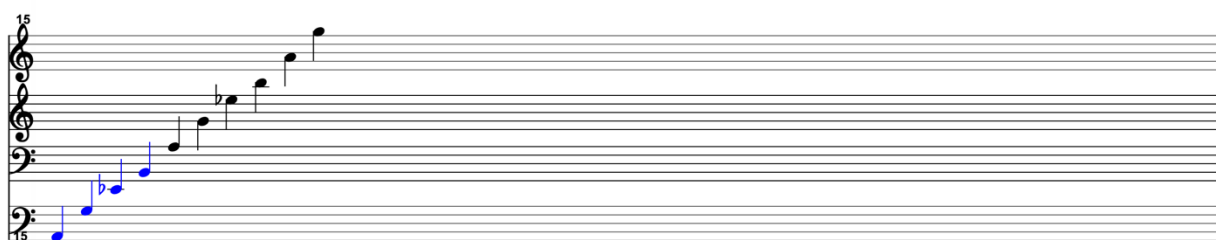
Arp 3/7 (8 sons in a row)



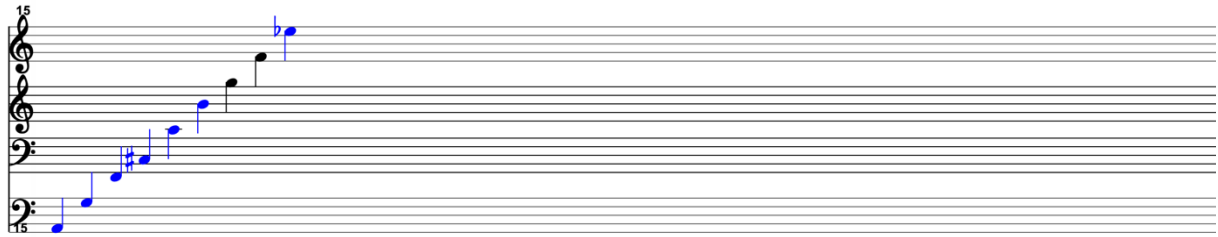
Arp 4/7 (7 sons)



Arp 5/7 (7m6m6m7m, 4 sons)



Arp 6/7 (7 sons)



Modéchelle 6 (solaire)

-u-uu

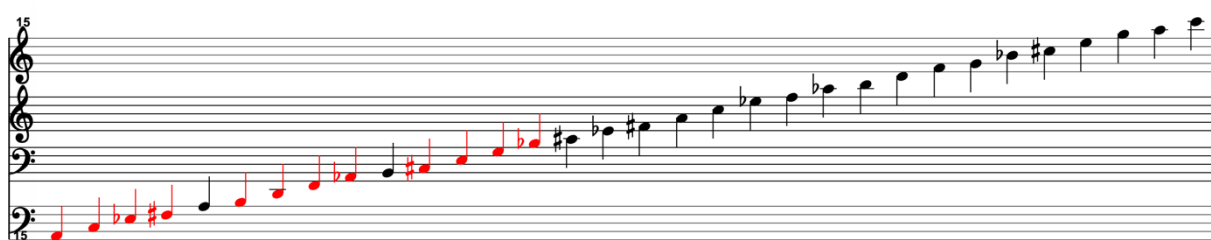
(5J / 8 à 12 sons / 7 octaves / 4 permutations / 6 transpositions)



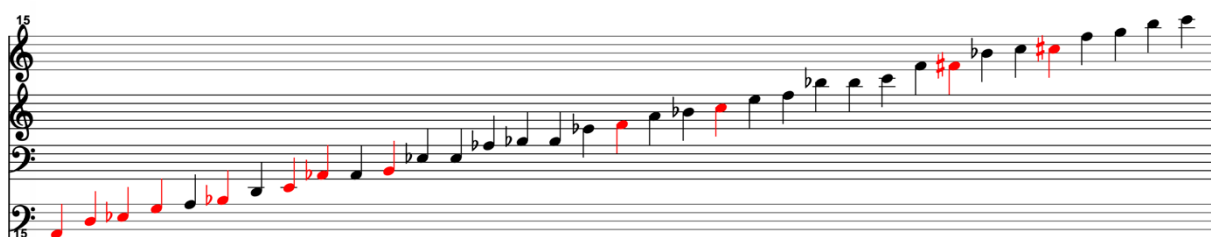
Arp 1/2 (12 sons)



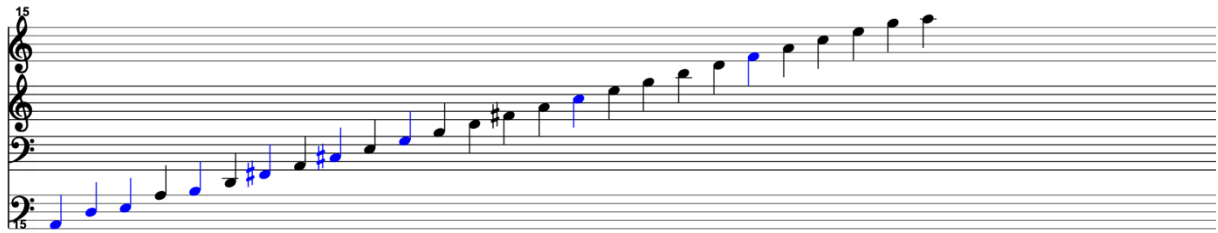
Arp 2/2 (12 sons)



Arp 1/3 (12 sons)



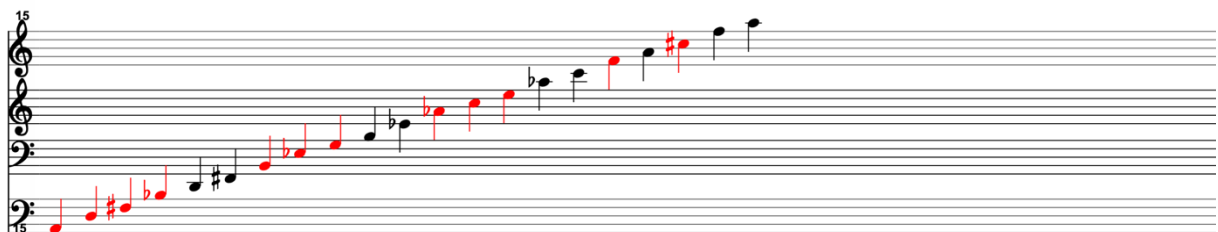
Arp 2/3 (9 sons)



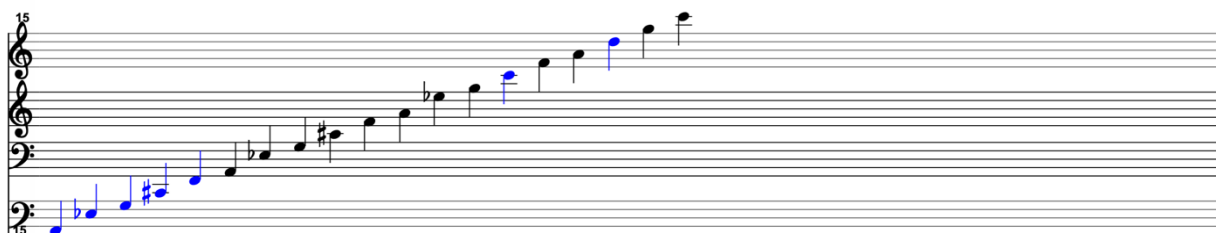
Arp 2/4 (12 sons)



Arp 3/3 (12 sons)



Arp 3/4 (7 sons)



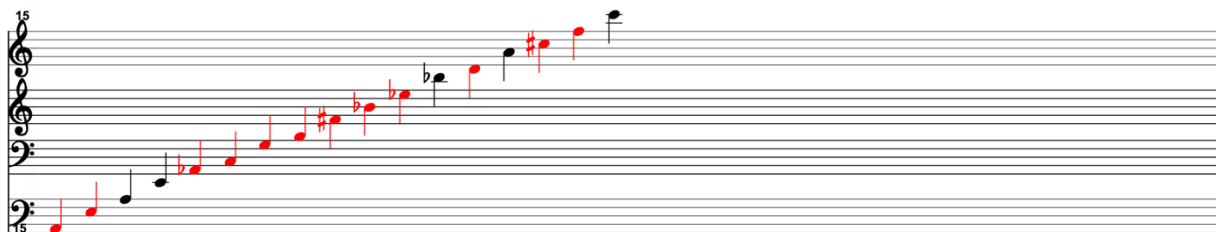
Arp 4/4 (12 sons)



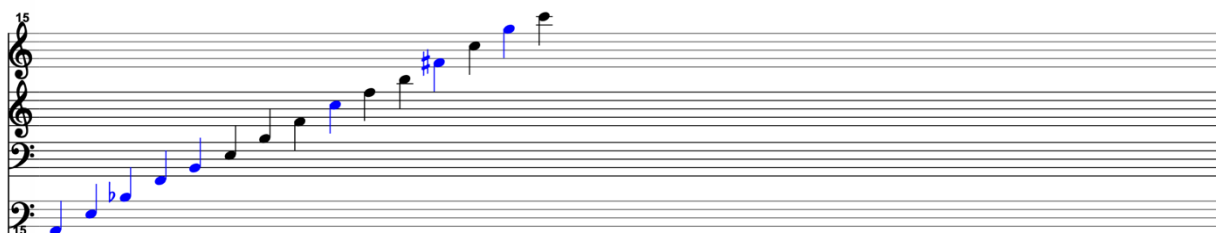
Arp 2/5 (11 sons = 9 in a row + 2)



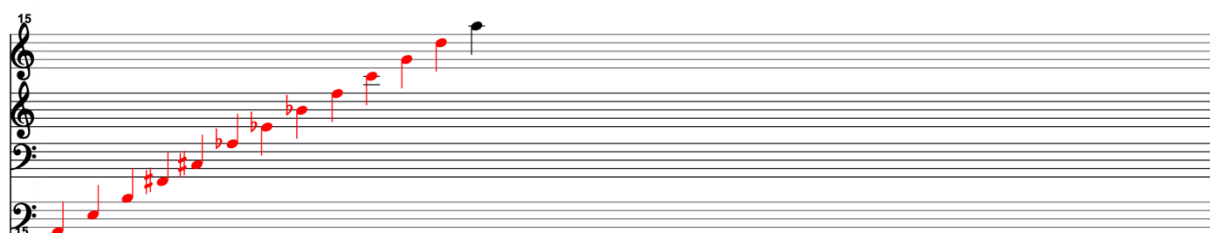
Arp 3/5 (12 sons)



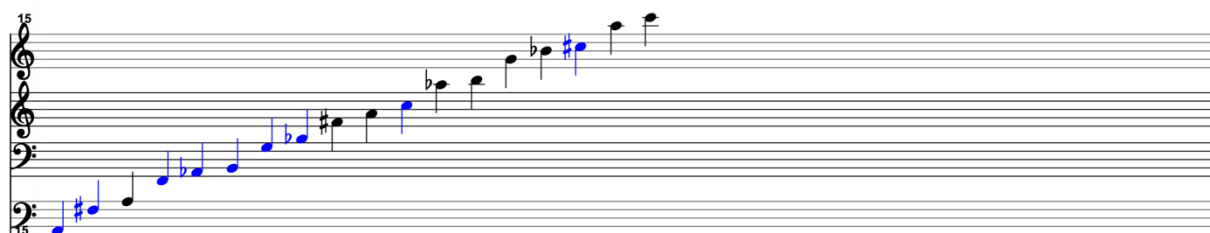
Arp 4/5 (8 sons)



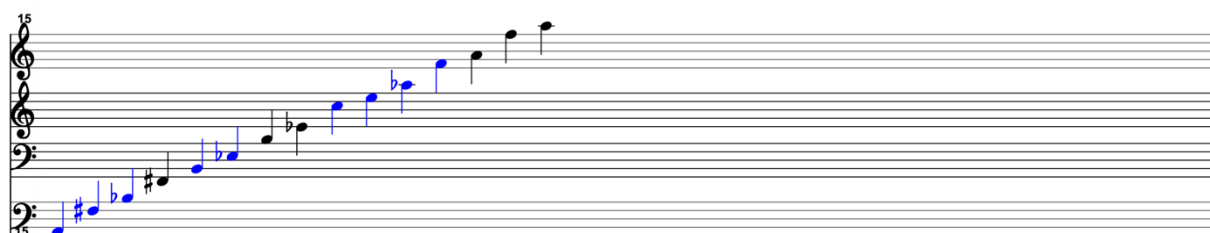
Arp 5/5 (12 sons in a row)



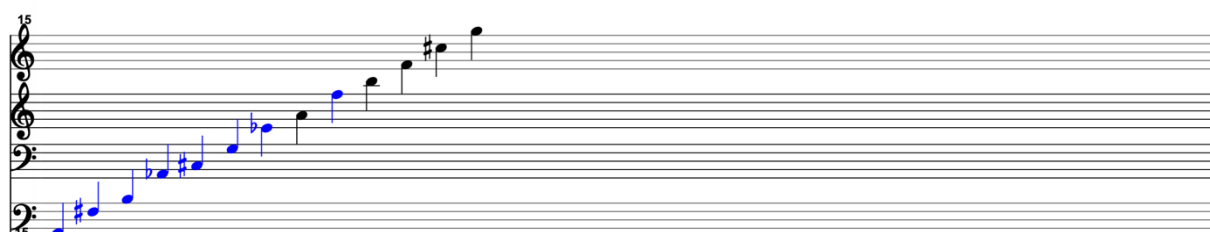
Arp 2/6 (9 sons)



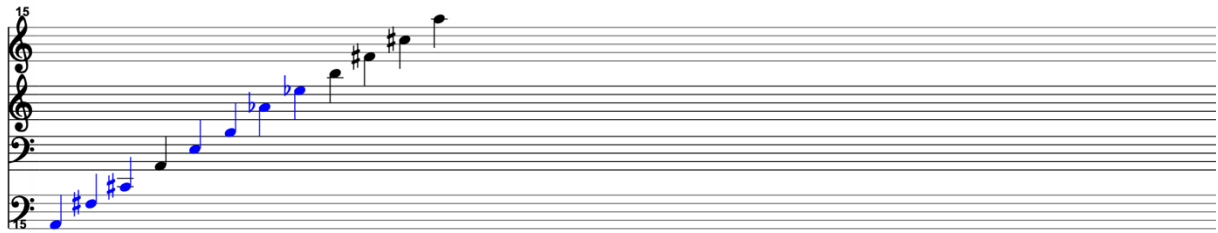
Arp 3/6 (9 sons)



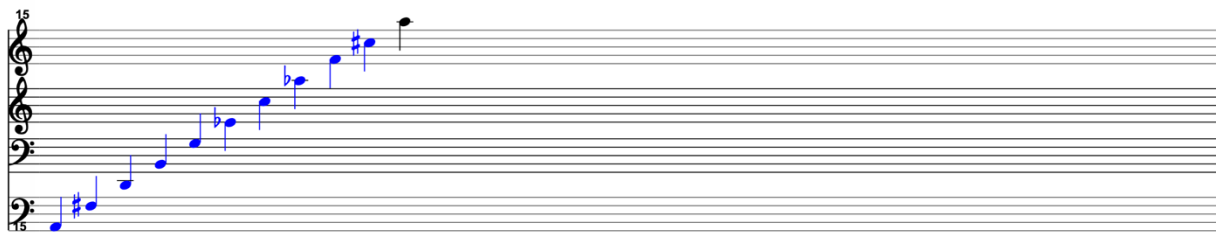
Arp 4/6 (8 sons = 7 in a row + 1)



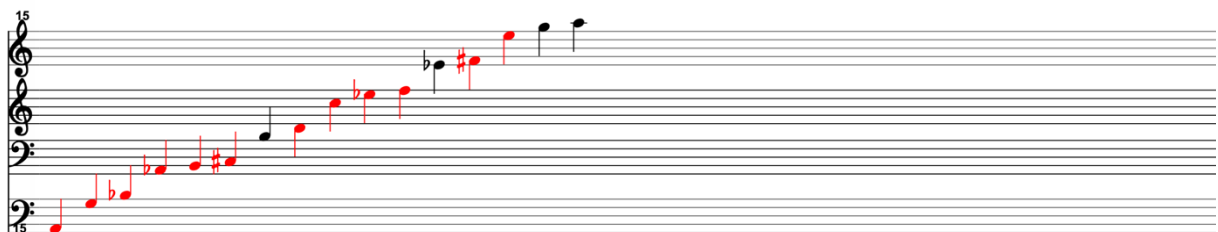
Arp 5/6 (7 sons)



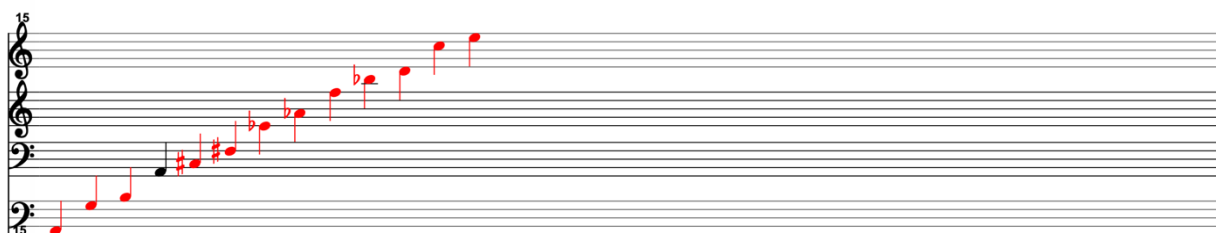
Arp 6/6 (10 sons in a row)



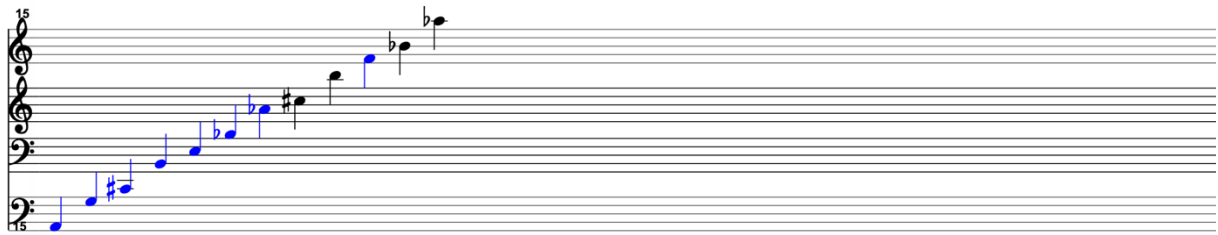
Arp 2/7 (12 sons)



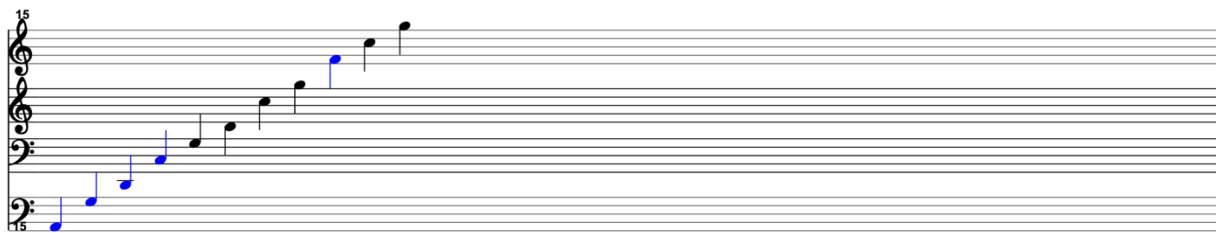
Arp 3/7 (12 sons)



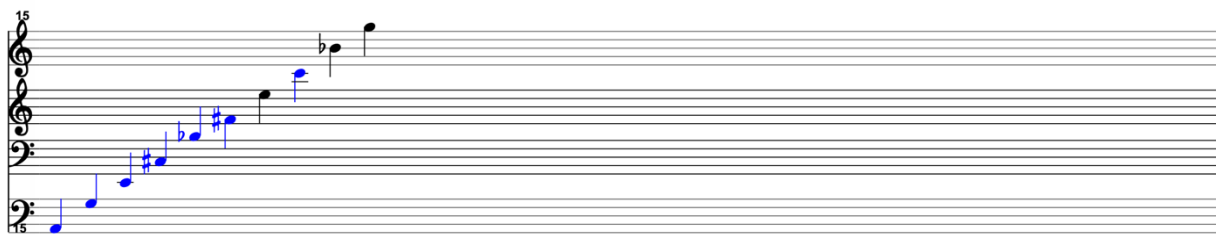
Arp 4/7 (8 sons = 7 in a row + 1)



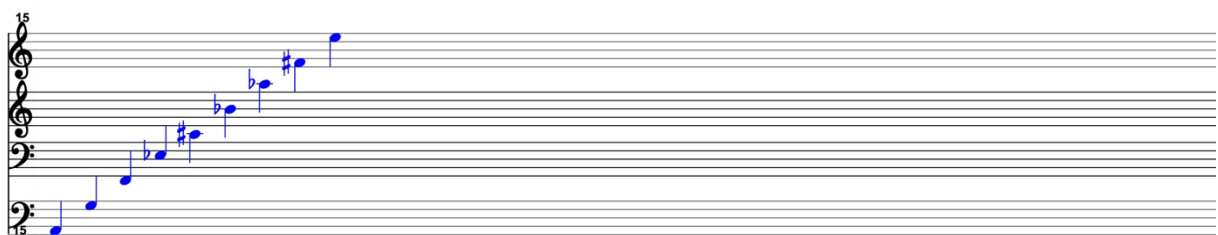
Arp 5/7 (7m5J7m5J5J7m5J7m5J5J, 5 sons)



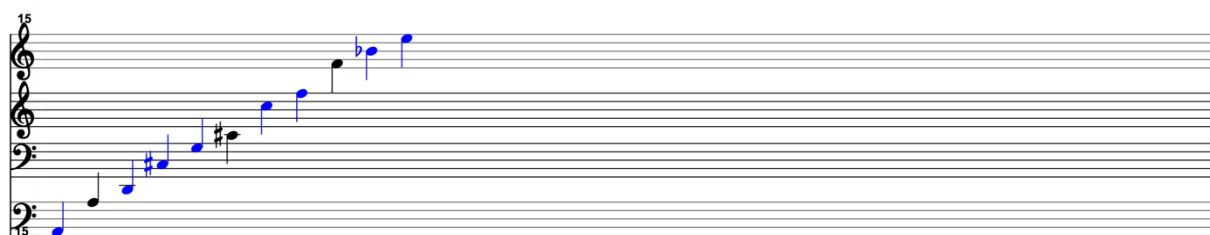
Arp 6/7 (7m6M6M6M6m7m6m7m6M, 7 sons = 6 in a row + 1)



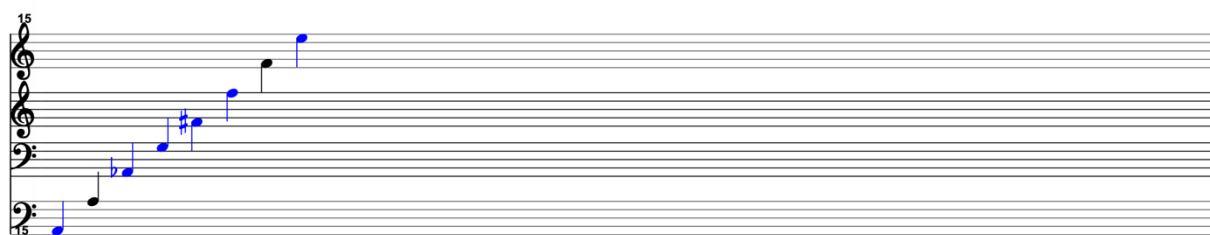
Arp 7/7 (7m x 8, 9 sons in a row)



Arp 4/8 (8 sons, 8J4J7M4+4+7M4J8J4J4+)



Arp 8/8 (6 sons, non octaviant, 8J7M7M7M7M8J7M)



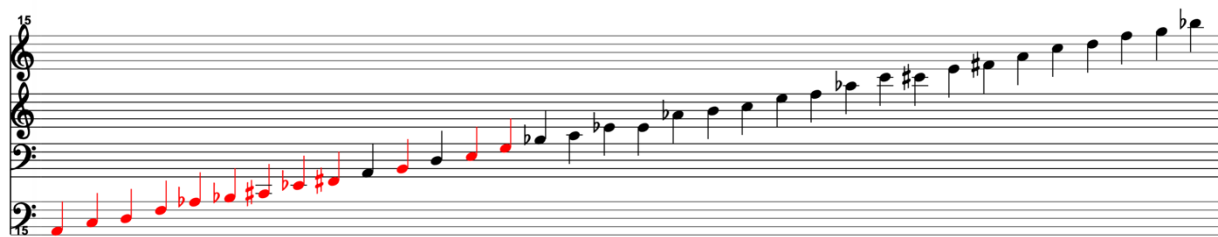
Modéchelle 7 (bi-octavante)

-u--u

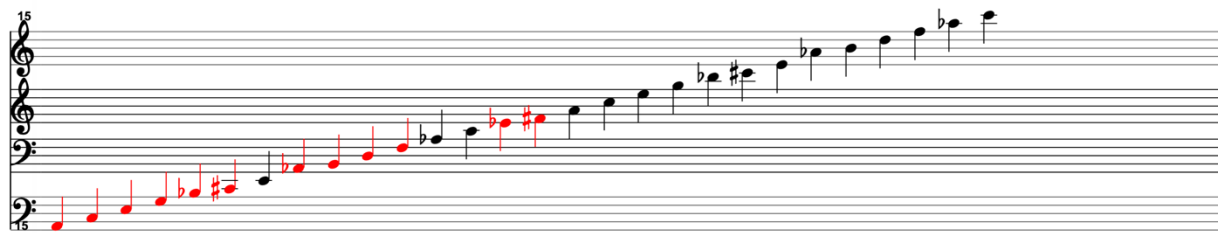
(6m / 8 à 12 sons / 2 octaves / 4 permutations / 7 transpositions)



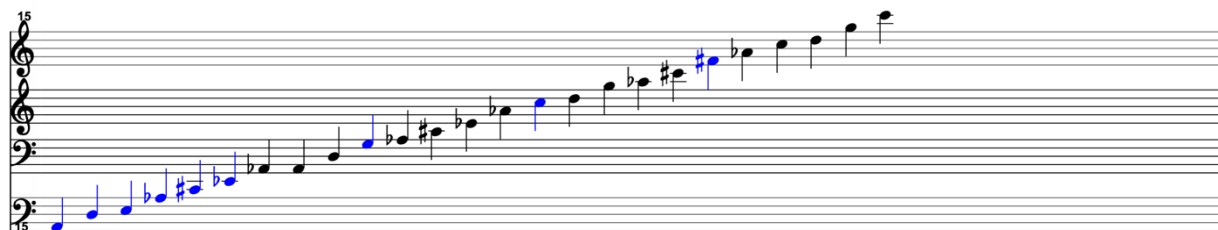
Arp 1/2 (12 sons)



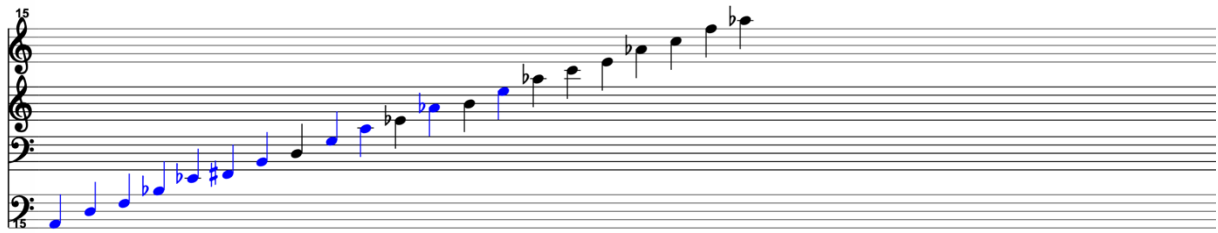
Arp 2/2 (12 sons)



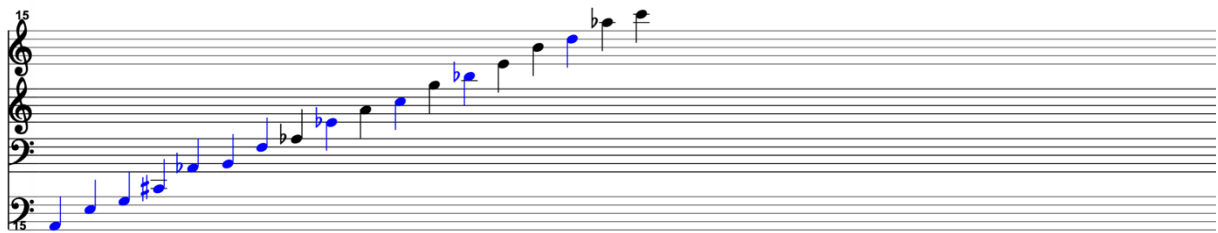
Arp 1/3 (9 sons)



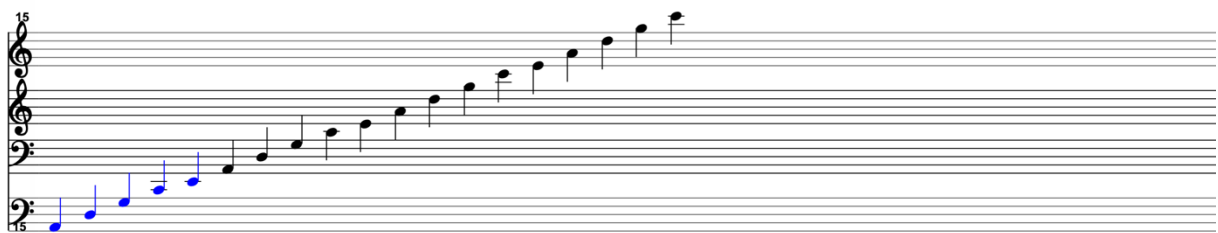
Arp 2/3 (11 sons)



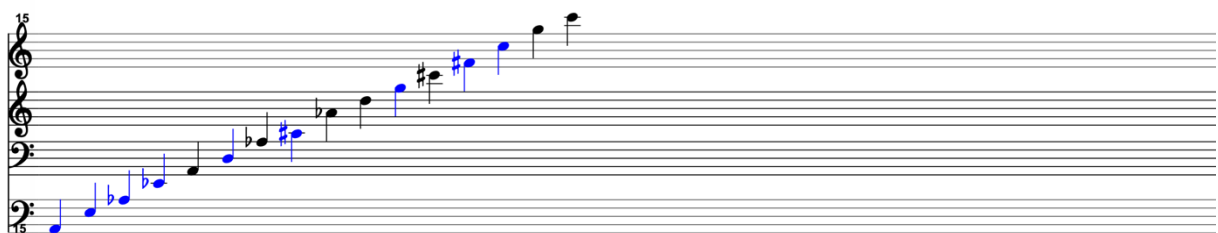
Arp 2/4 (11 sons)



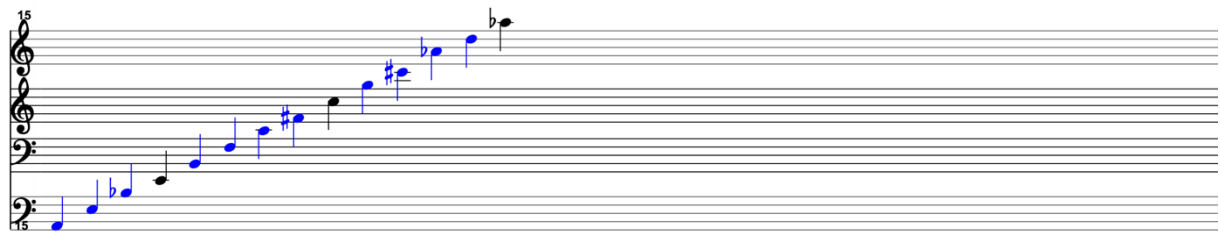
Arp 3/3 (5 sons in a row)



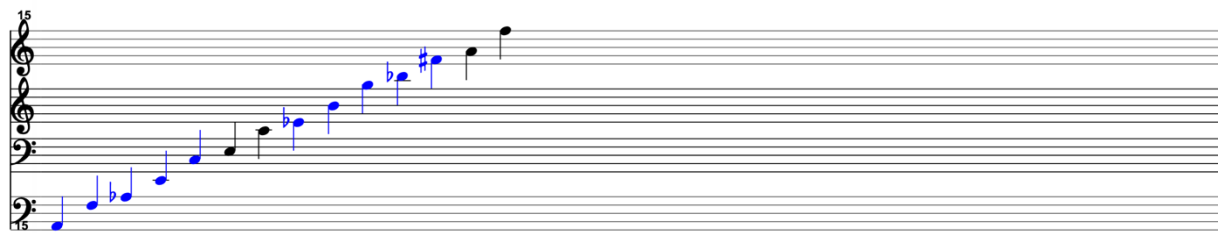
Arp 3/4 (9 sons)



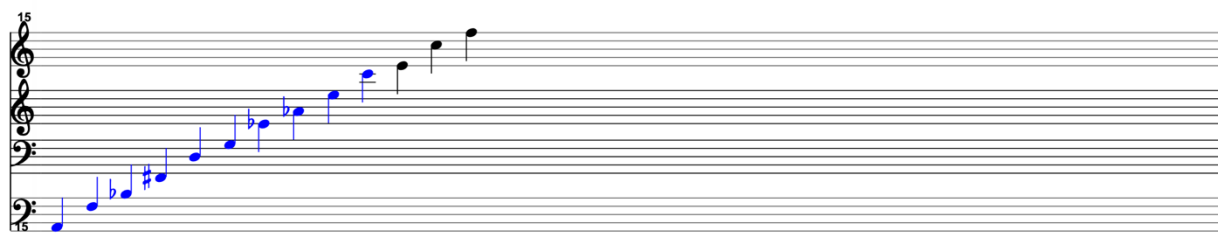
Arp 4/4 (11 sons)



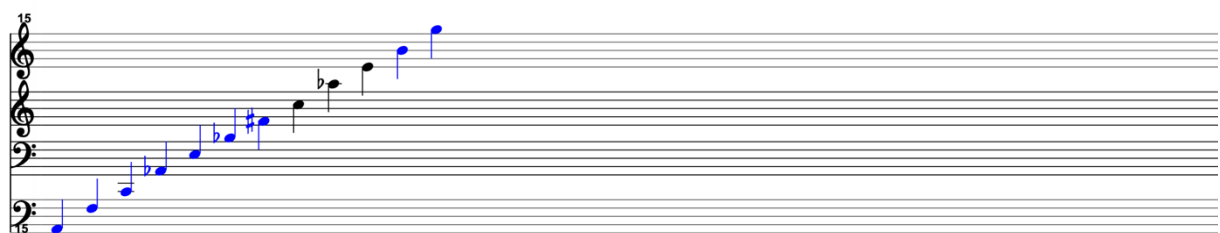
Arp 2/5 (10 sons)



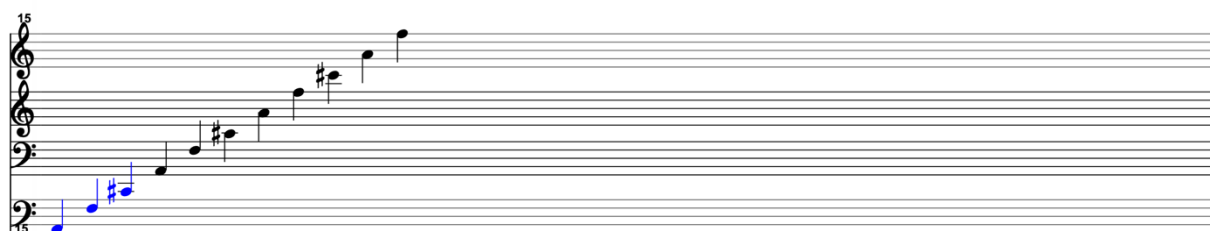
Arp 3/5 (10 sons in a row)



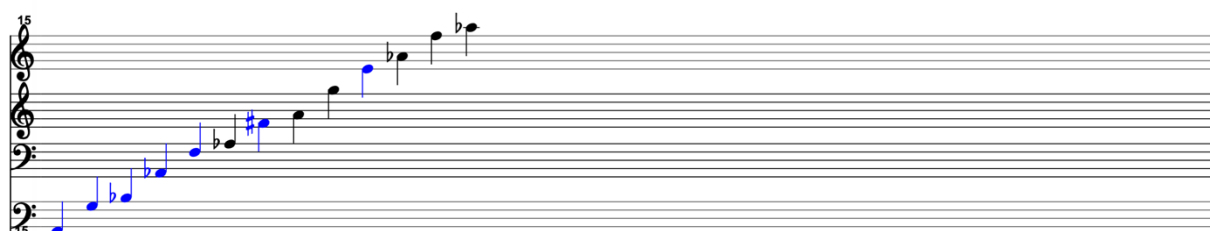
Arp 4/5 (9 sons = 7 sons in a row + 2)



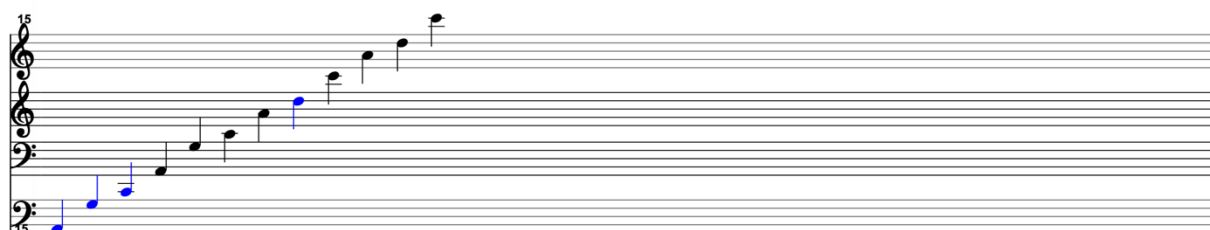
Arp 5/5 (6m, 3 sons)



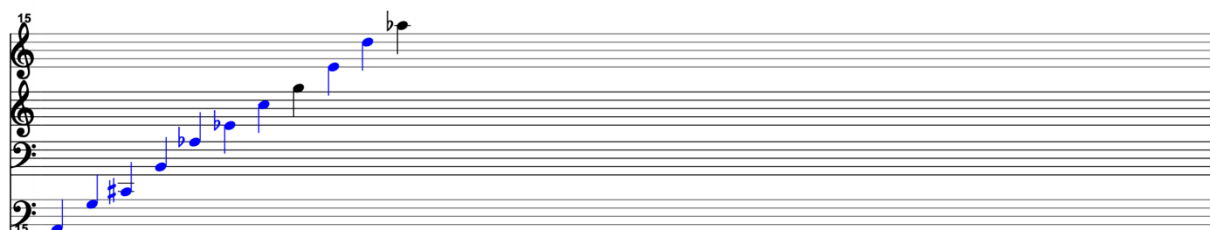
Arp 2/6 (7 sons)



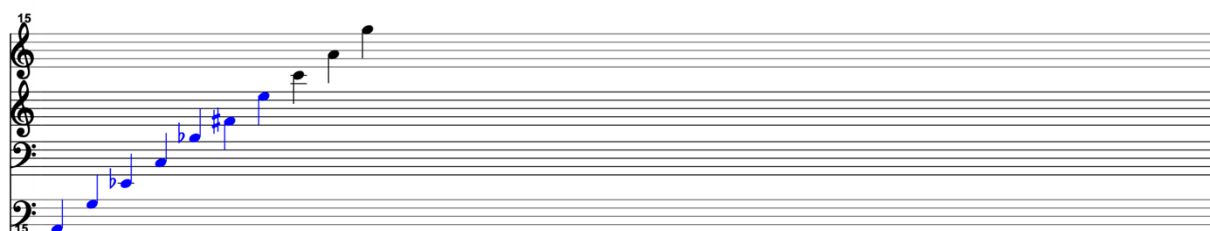
Arp 3/6 (4 sons)



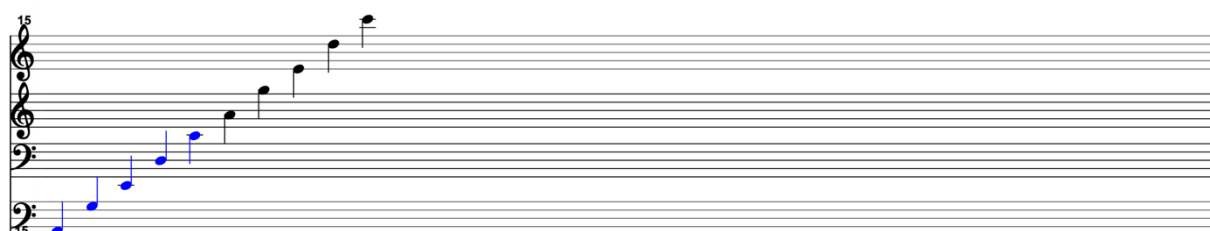
Arp 4/6 (9 sons = 7 in a row + 2)



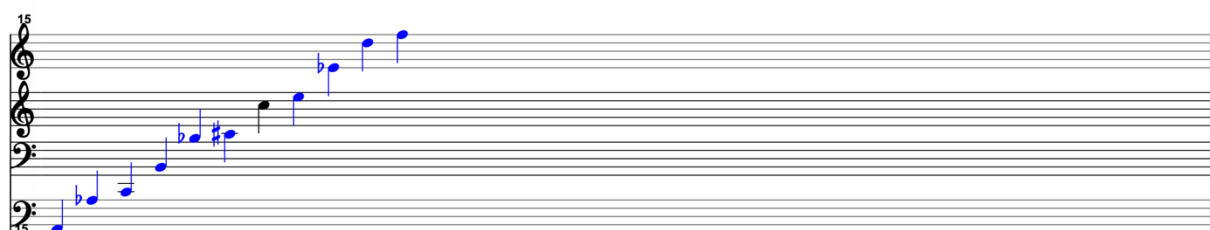
Arp 5/6 (7 sons in a row)



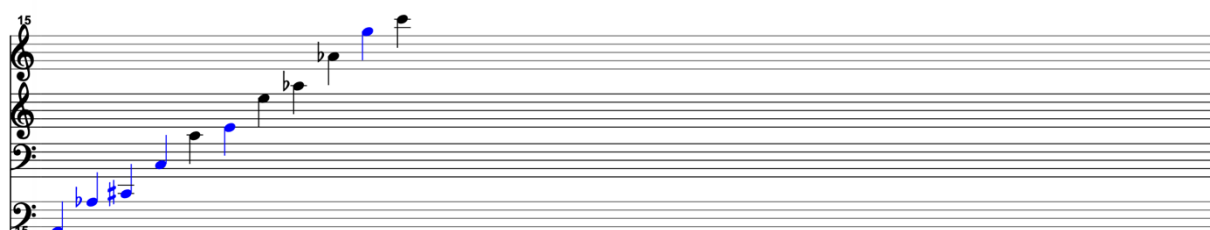
Arp 6/6 (5 sons in a row)



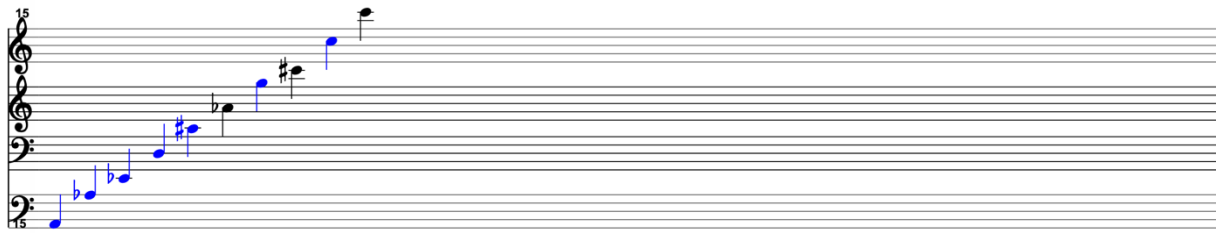
Arp 2/7 (10 sons = 5 + 5)



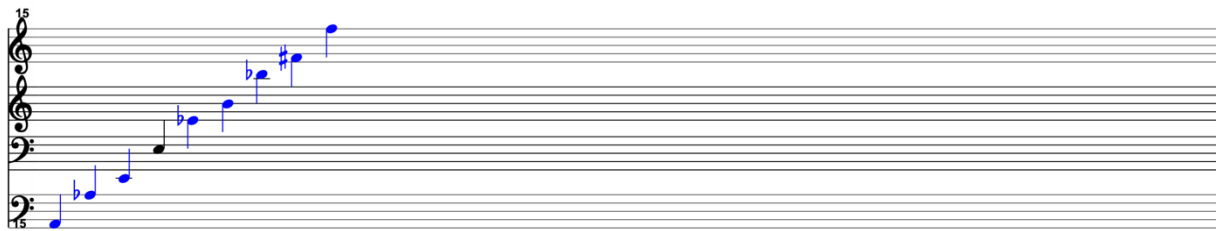
Arp 3/7 (6 sons)



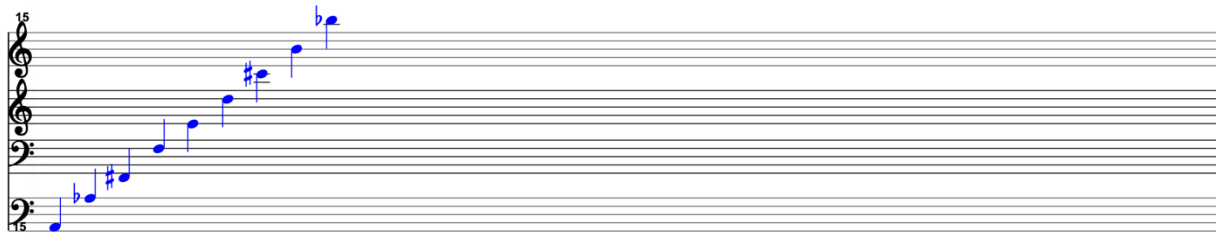
Arp 4/7 (7 sons)



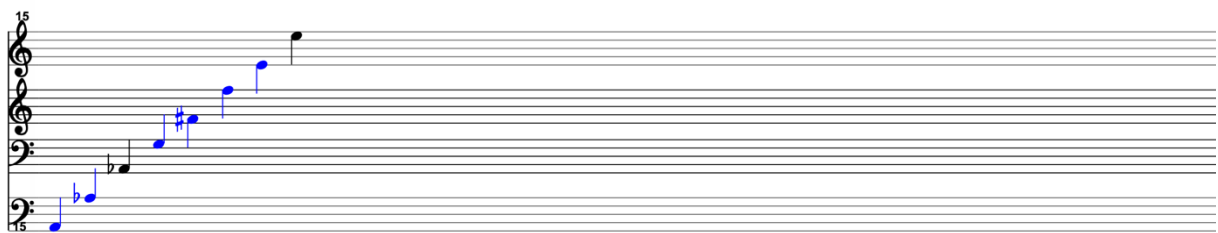
Arp 5/7 (8 sons)



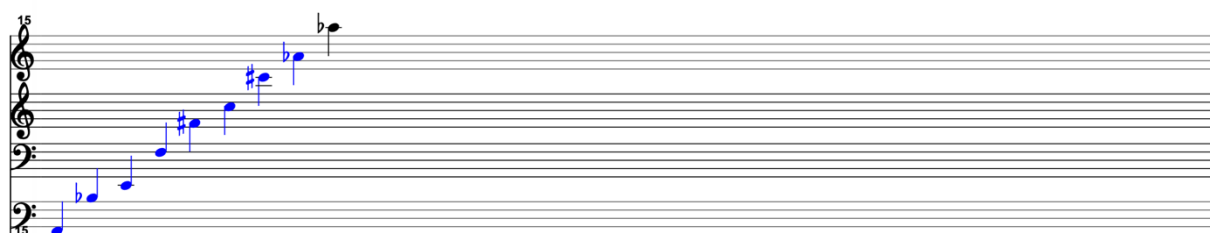
Arp 6/7 (9 sons in a row)



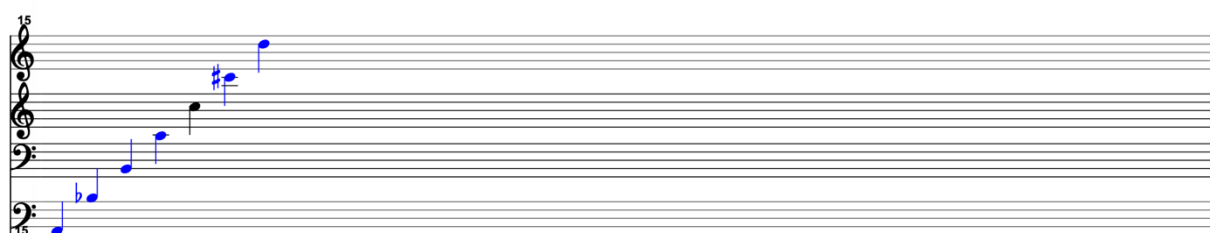
Arp 7/7 (6 sons, non octaviant)



Arp 4/8 (8 sons in a row)



Arp 8/8 (6 sons, non octaviant)



Modéchelle 8a

-uu--u

(6M / 8 à 12 sons / 3 octaves / 5 permutations / 8 transpositions)



Arp 1/2 (12 sons)



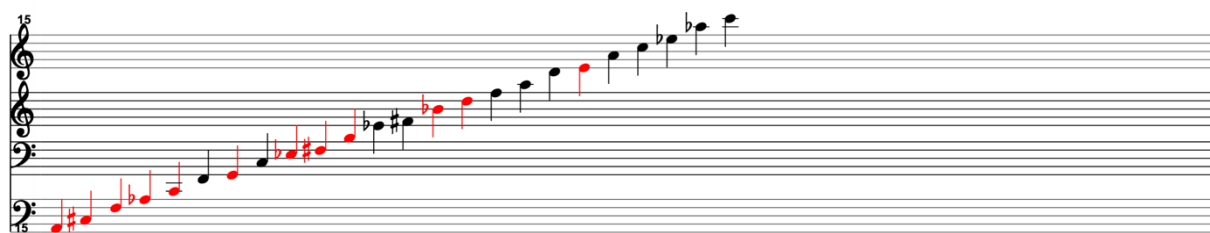
Arp 2/2 (4 sons, accord de 7ème diminuée)



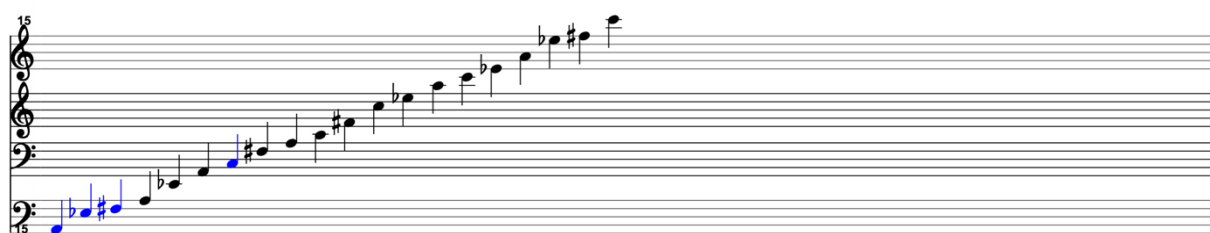
Arp 1/3 (7 sons)



Arp 2/3 (12 sons)



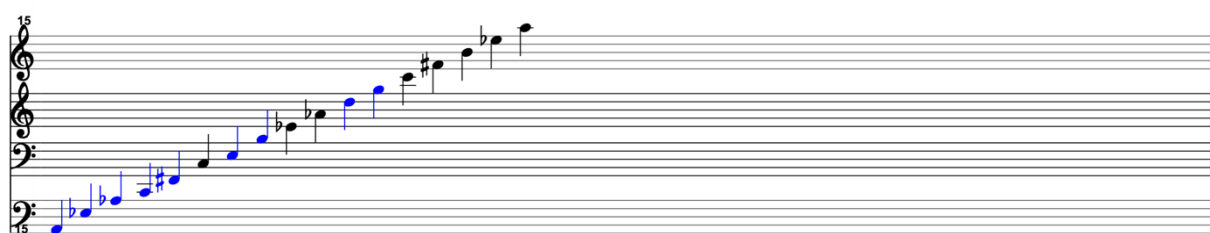
Arp 2/4 (4 sons ± accord de 7ème diminuée)



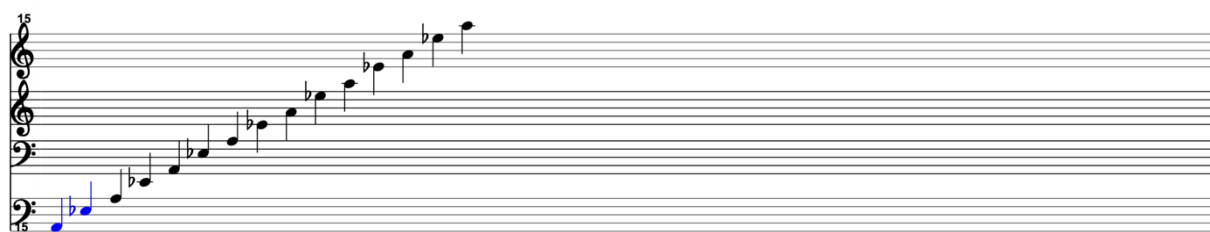
Arp 3/3 (8 sons, 3M4J x4 puis octaviant)



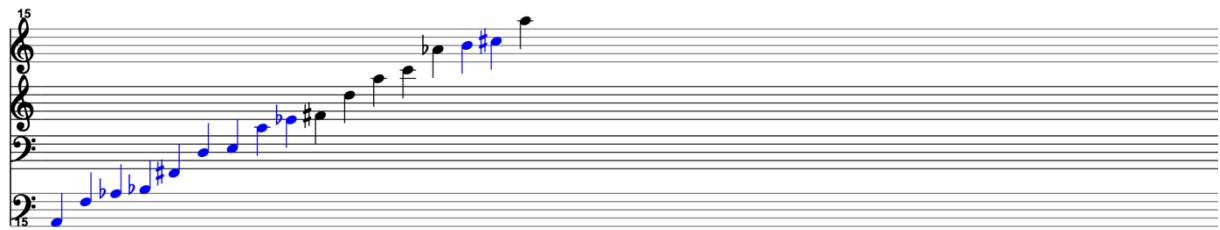
Arp 3/4 (9 sons)



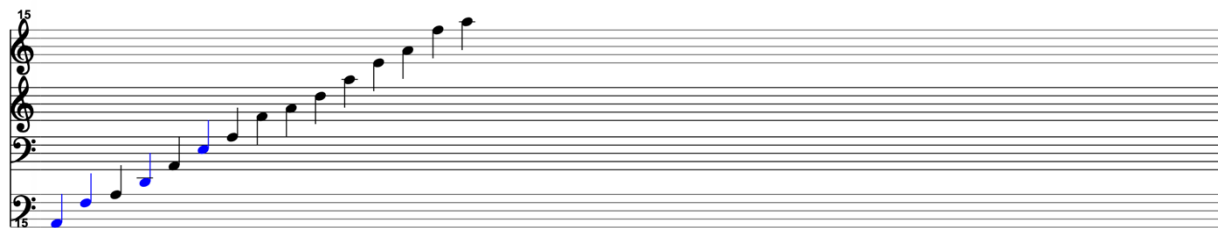
Arp 4/4 (4+, 2 sons)



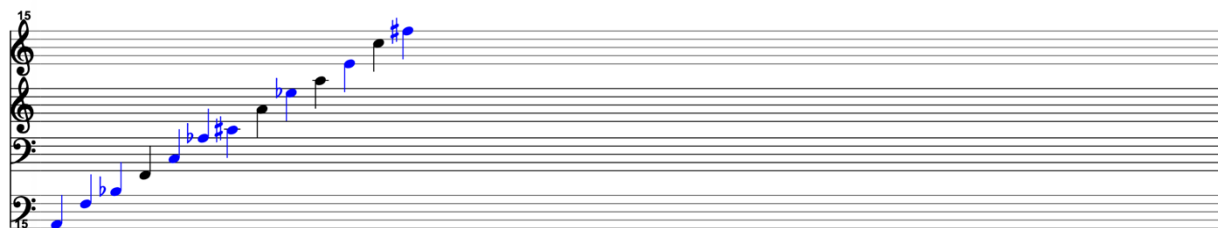
Arp 2/5 (11 sons)



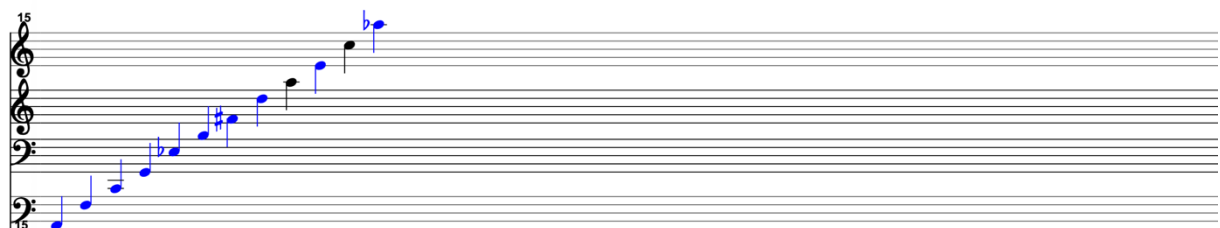
Arp 3/5 (4 sons)



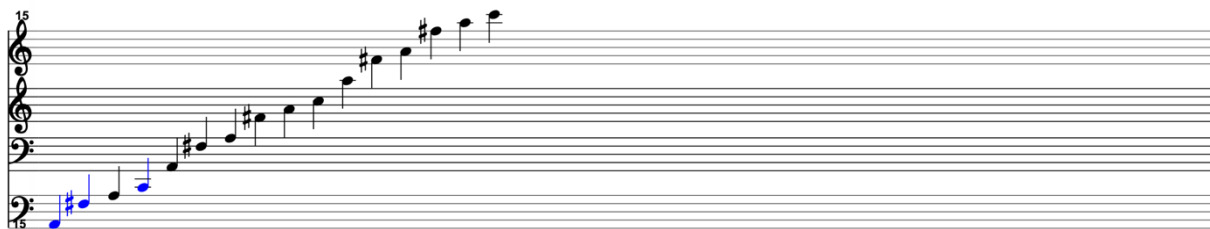
Arp 4/5 (9 sons)



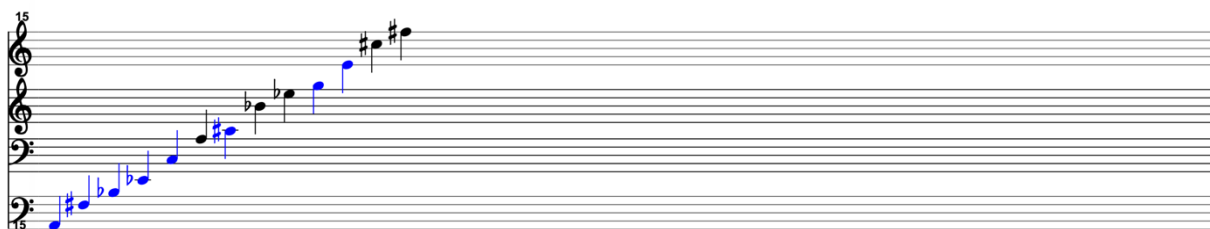
Arp 5/5 (10 sons)



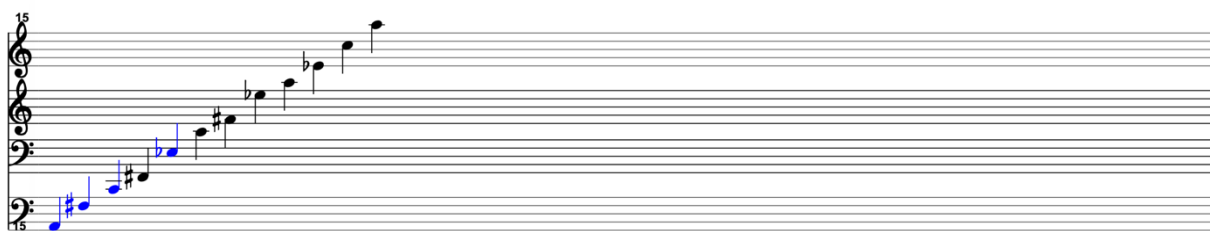
Arp 2/6 (3 sons)



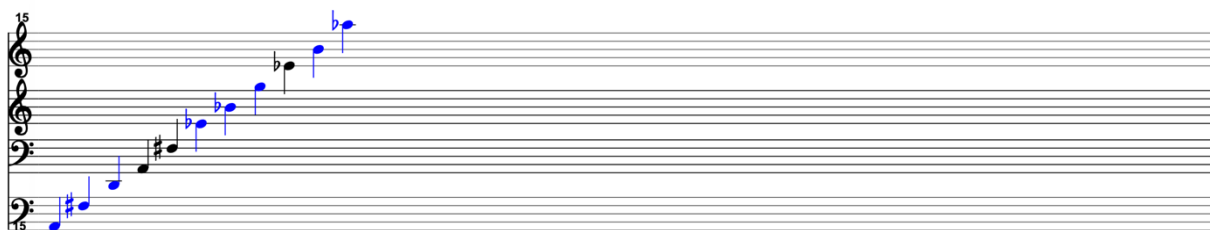
Arp 3/6 (8 sons)



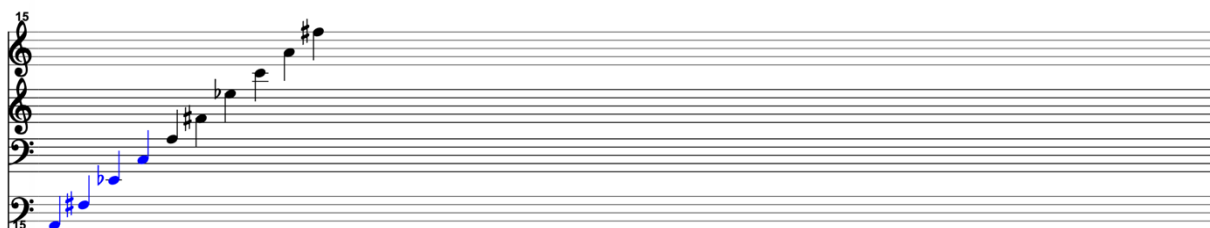
Arp 4/6 (4 sons, ± 7ème diminuée)



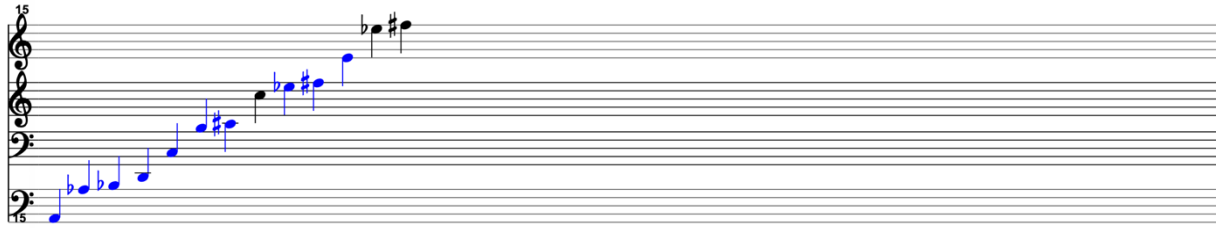
Arp 5/6 (8 sons)



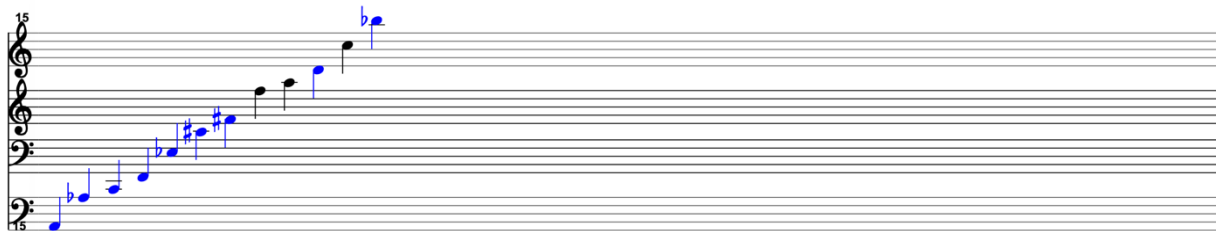
Arp 6/6 (4 sons, ± 7ème diminuée)



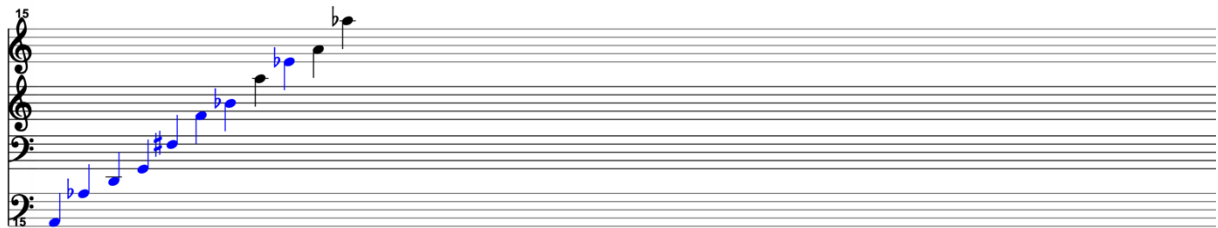
Arp 2/7 (10 sons = 7 in a row + 3)



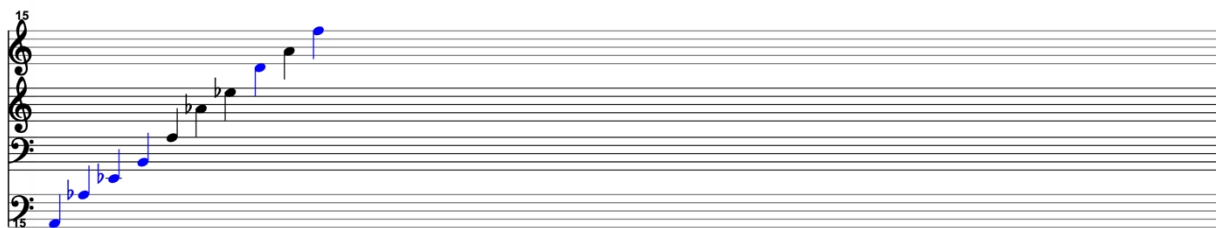
Arp 3/7 (9 sons)



Arp 4/7 (8 sons = 7 in a row + 1)



Arp 5/7 (6 sons)



Arp 6/7 (9 sons in a row)

[illegible]

Arp 7/7 (8 sons in a row)

[illegible]

Arp 4/8 (2 sons, 8J & 4+)

A musical score for three voices: Soprano, Alto, and Tenor/Bass. The key signature has one flat (B-flat), and the time signature is common time (C). The Soprano part starts on G4 and ascends stepwise to B-flat5. The Alto part starts on E4 and ascends stepwise to A4. The Tenor/Bass part starts on C3 and ascends stepwise to F3. All parts end with a fermata.

Musical notation for "The Rose Tree". The score is written for three voices: Soprano, Alto, and Tenor/Bass. The key signature has one flat (B-flat), and the time signature is common time (C). The Soprano part starts on G4 and ascends stepwise to B-flat5. The Alto part starts on E4 and ascends stepwise to A4. The Tenor/Bass part starts on C3 and ascends stepwise to F3. All parts end with a fermata.

Arp 8/8 = octaves

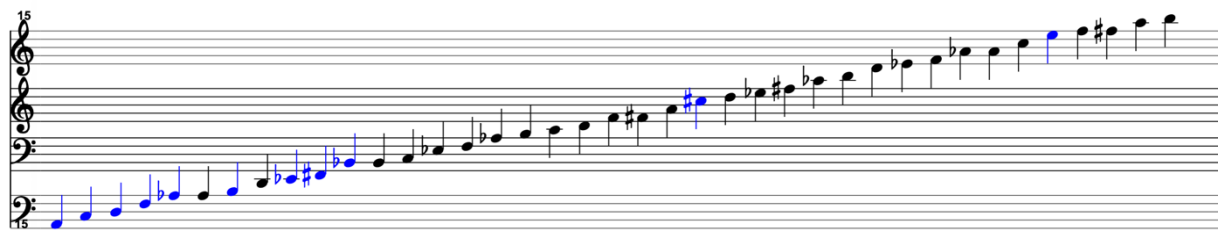
Modéchelle 8b

-u--uu

(6M / 8 à 12 sons / 3 octaves / 5 permutations / 8 transpositions)



Arp 1/2 (11 sons)



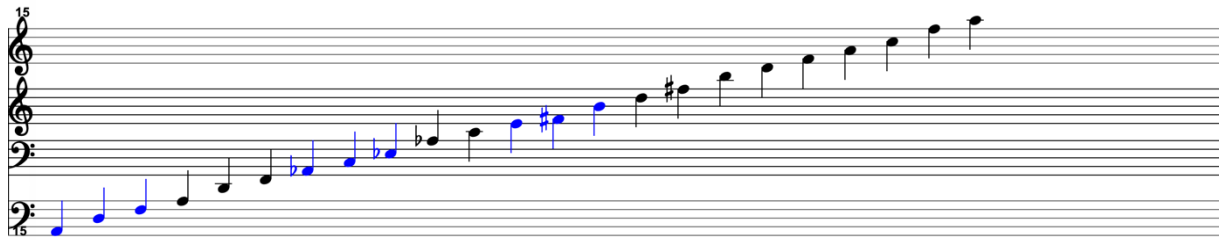
Arp 2/2 (8 sons)



Arp 1/3 (8 sons)



Arp 2/3 (9 sons)



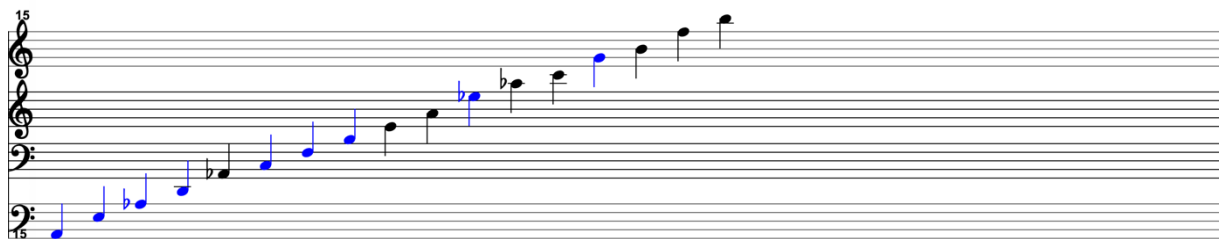
Arp 2/4 (8 sons)



Arp 3/3 (8 sons in a row)



Arp 3/4 (9 sons)



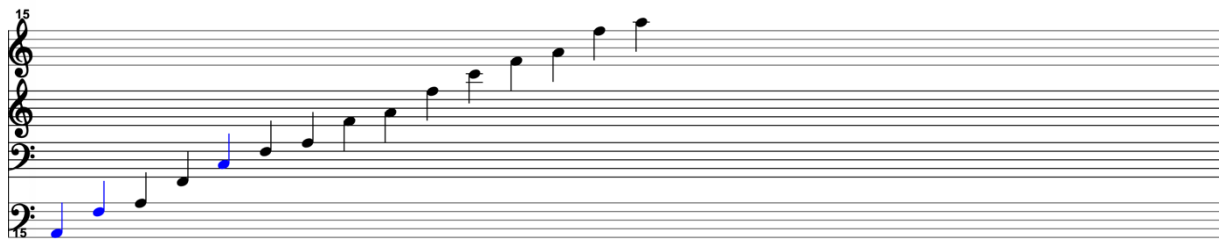
Arp 4/4 (5J4J4+, 4 sons)



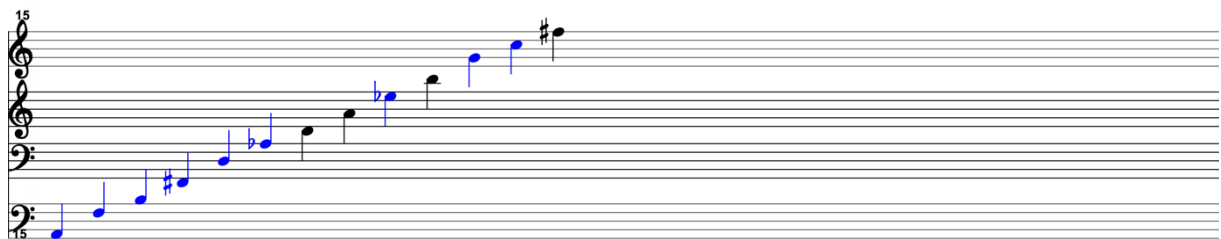
Arp 2/5 (10 sons)



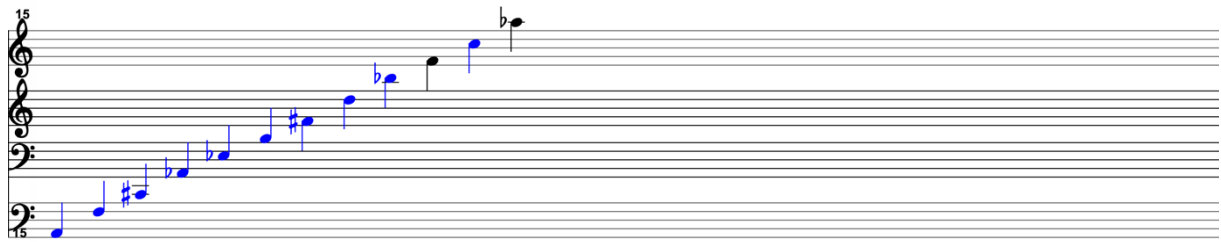
Arp 3/5 (3 sons = 6m3M6m5J4J3M x 2,5)



Arp 4/5 (9 sons)



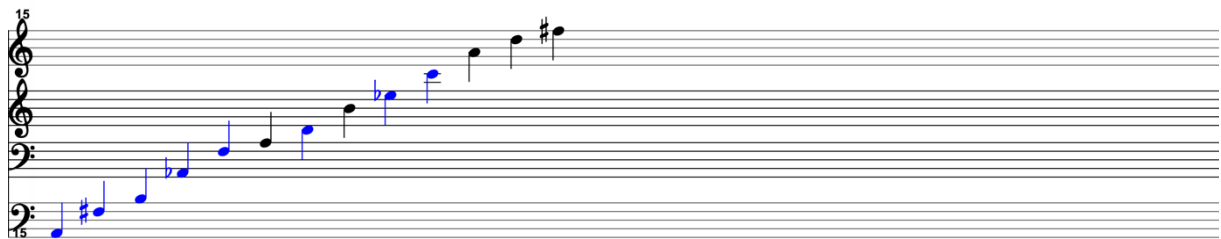
Arp 5/5 (10 sons = 9 in a row + 1)



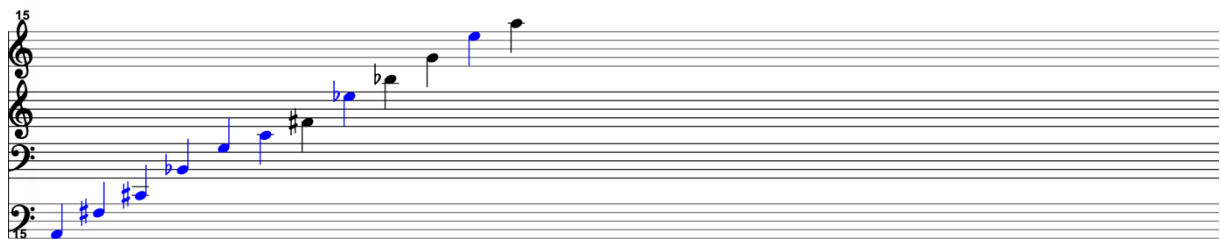
Arp 2/6 (4 sons = 6M3m6M3M2M x 2,5)



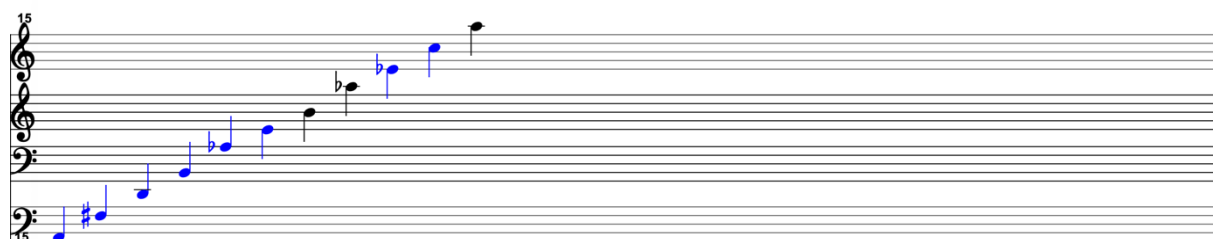
Arp 3/6 (8 sons)



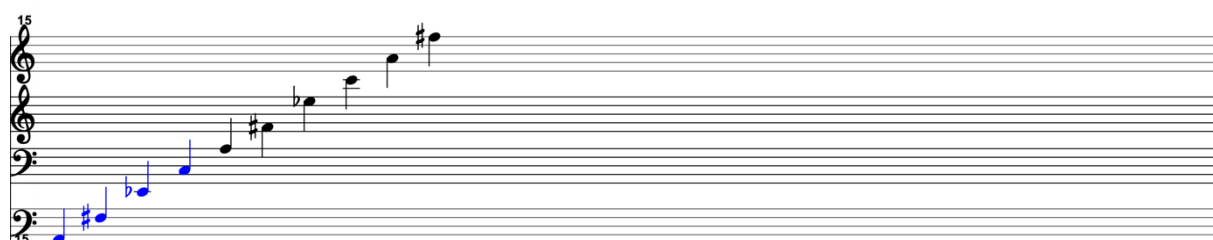
Arp 4/6 (8 sons)



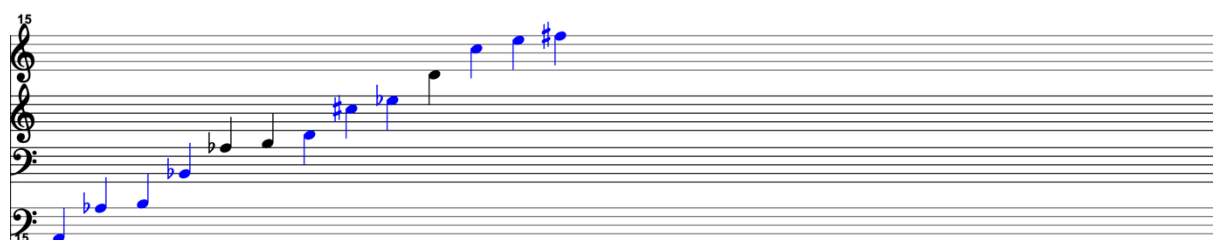
Arp 5/6 (8 sons)



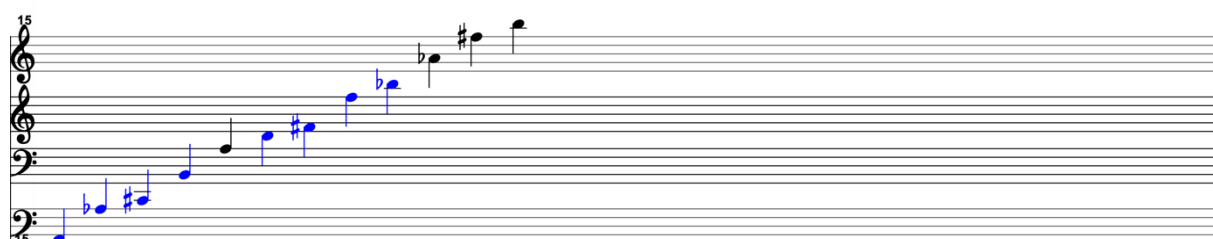
Arp 6/6 (4 sons ± 7ème diminuée)



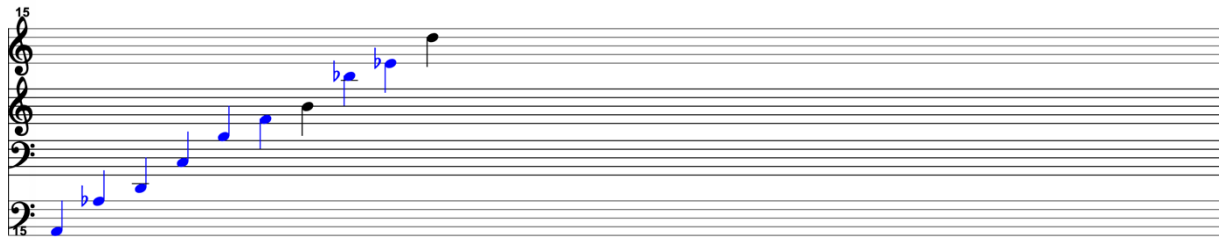
Arp 2/7 (10 sons)



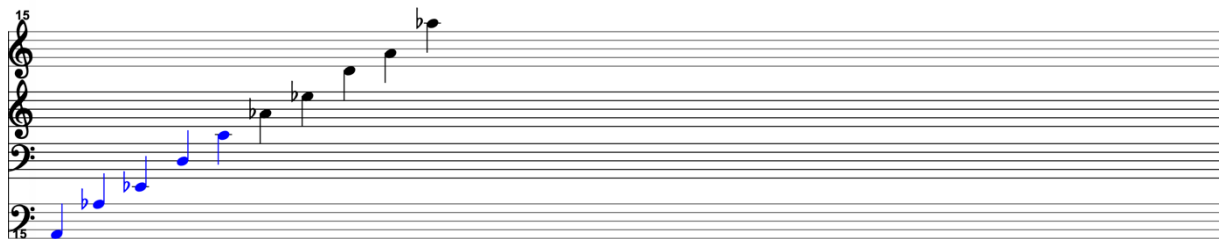
Arp 3/7 (8 sons)



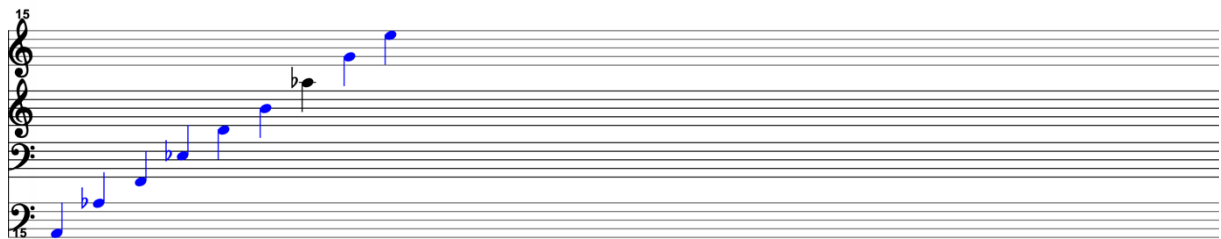
Arp 4/7 (8 sons)



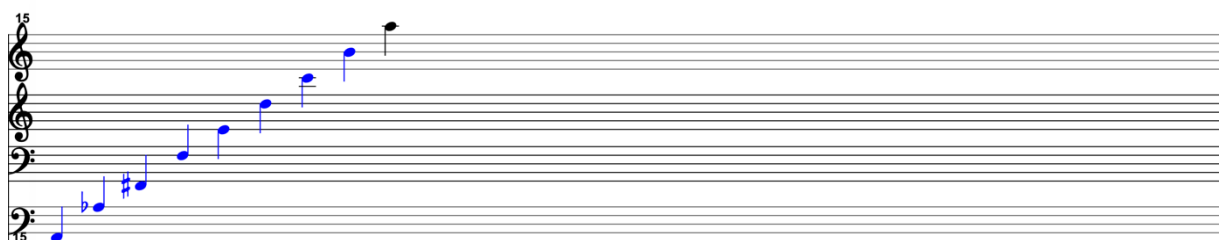
Arp 5/7 (5 sons in a row)



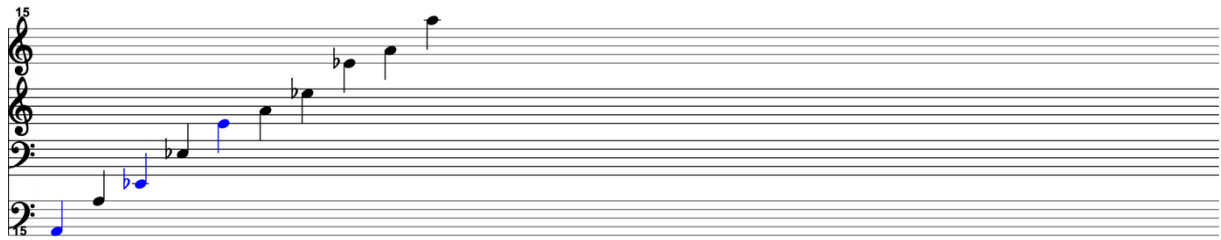
Arp 6/7 (8 sons = 6 in a row + 2)



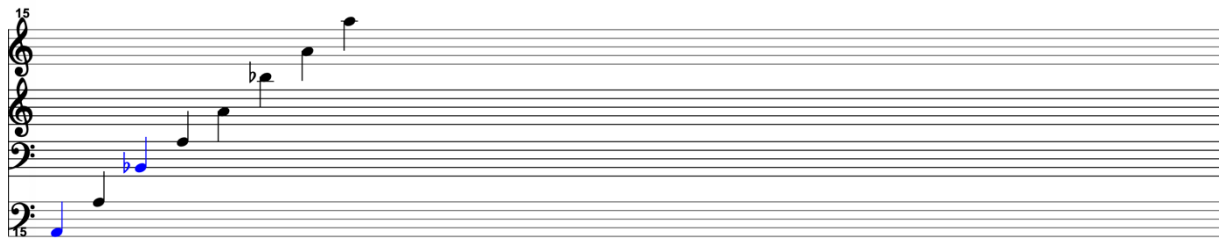
Arp 7/7 (8 sons in a row)



Arp 4/8 (8J4+8J9m4J4+8J4+8J = 3 sons)



Arp 8/8 (2 sons, non-octaviant = 8J9m7M x 2,5)



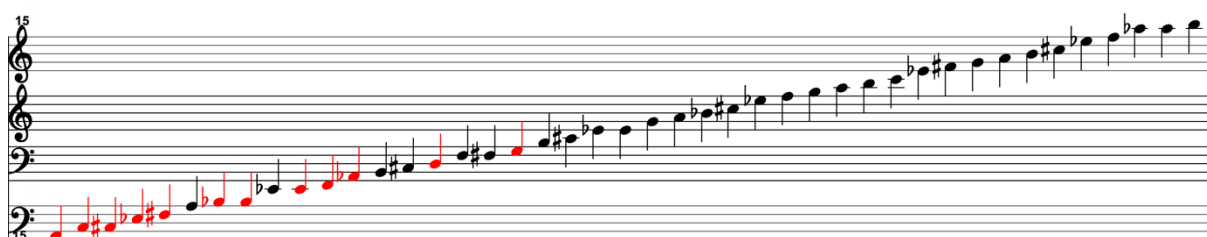
Modéchelle 9a

-uu--uu

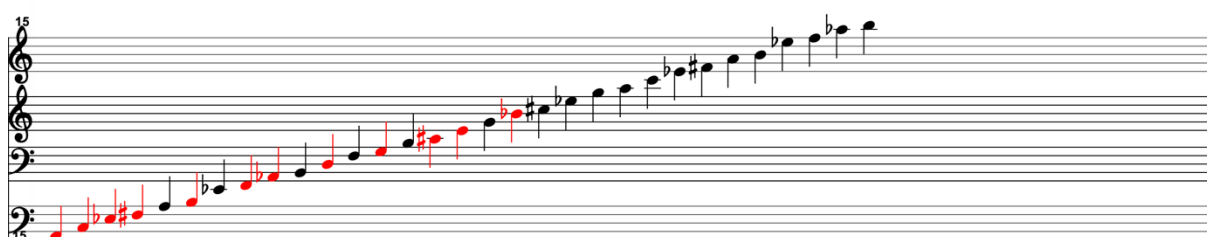
(7m / 8 à 12 sons / 5 octaves / 6 permutations / 9 transpositions)



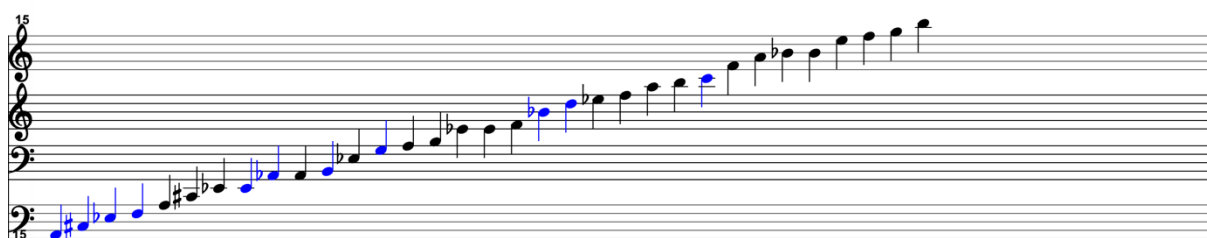
Arp 1/2 (12 sons)



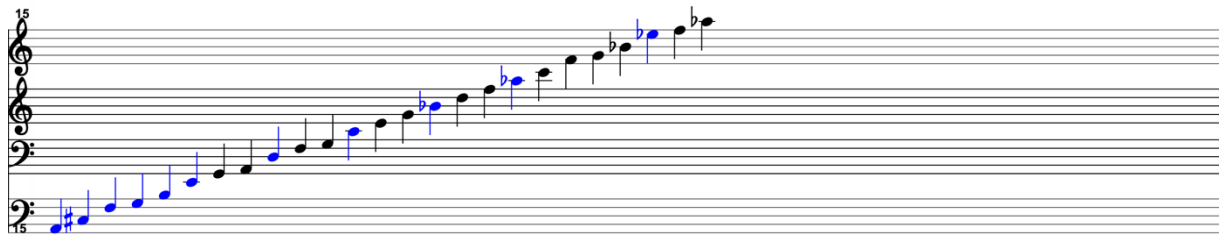
Arp 2/2 (12 sons)



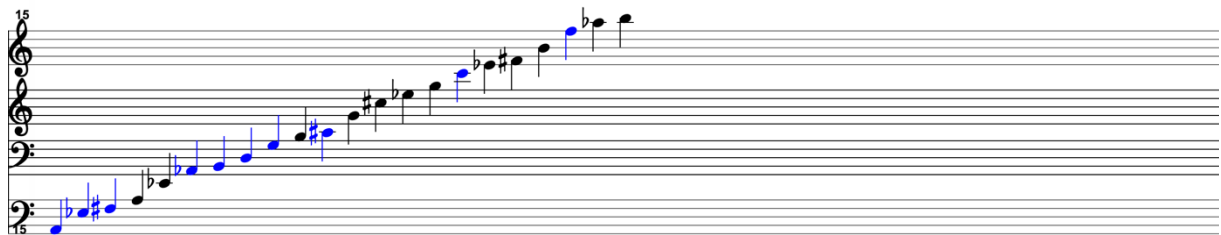
Arp 1/3 (11 sons)



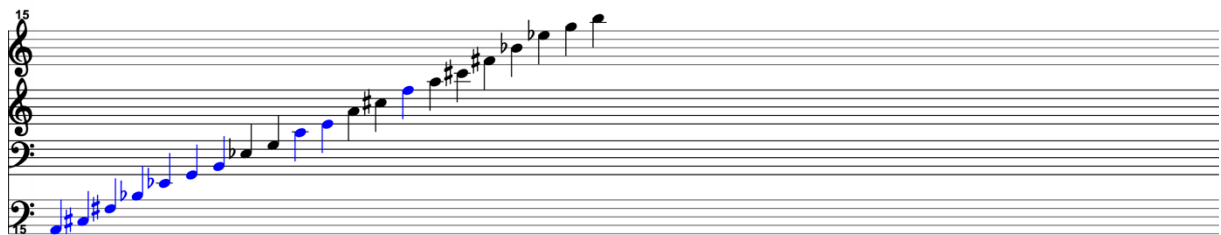
Arp 2/3 (11 sons)



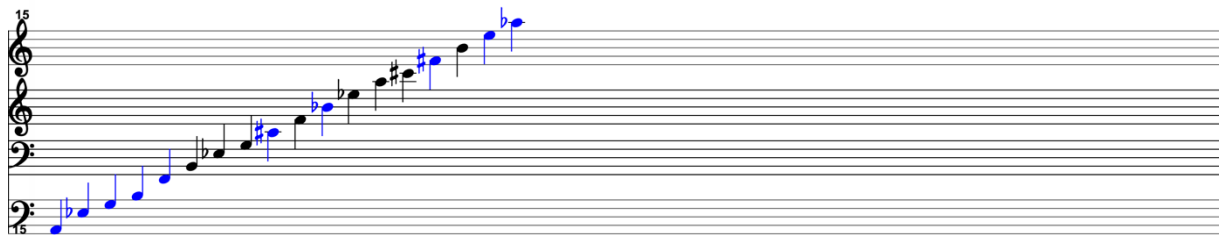
Arp 2/4 (10 sons)



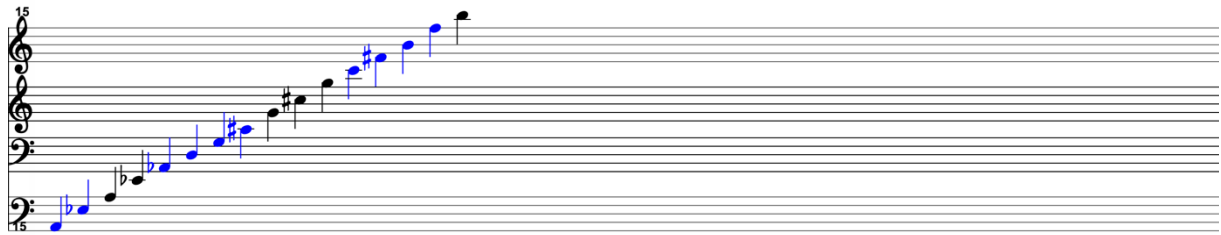
Arp 3/3 (10 sons)



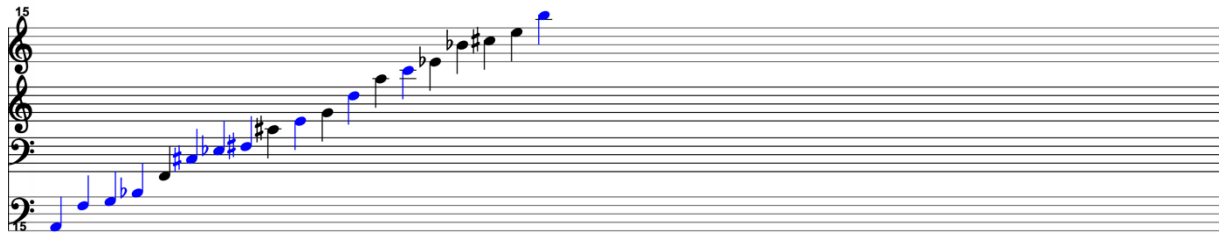
Arp 3/4 (10 sons)



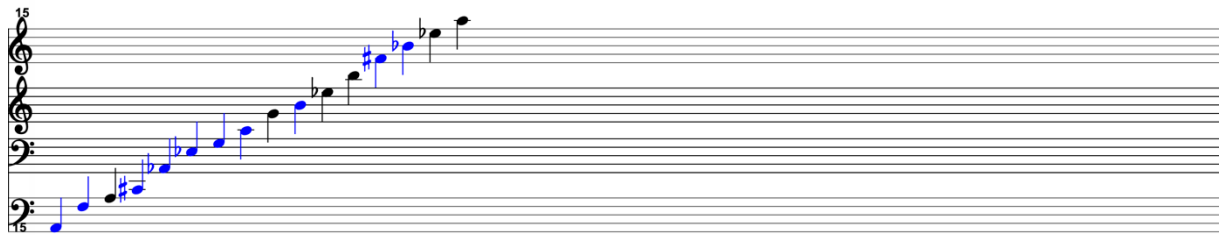
Arp 4/4 (10 sons)



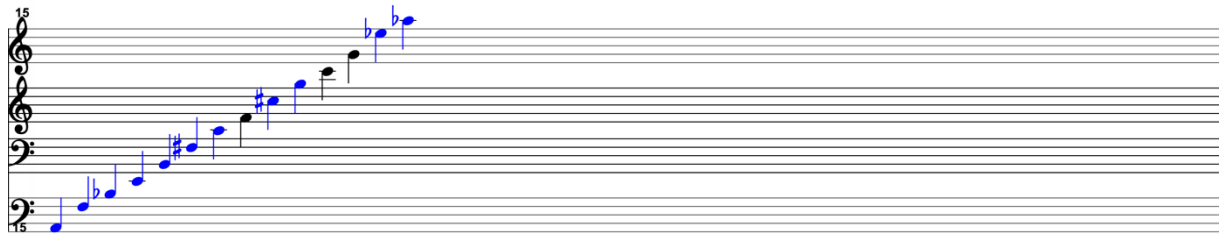
Arp 2/5 (11 sons)



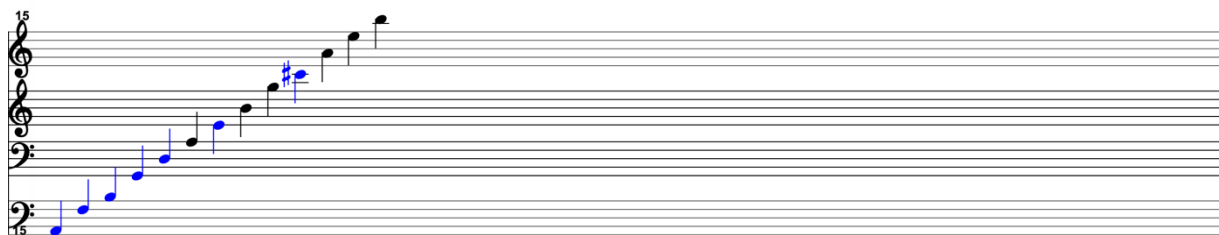
Arp 3/5 (10 sons)



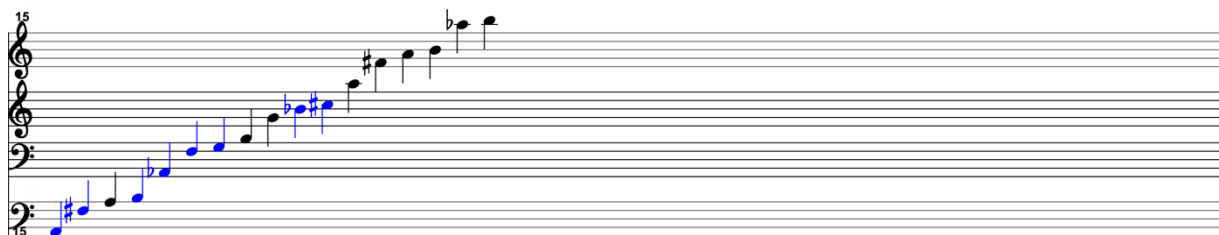
Arp 4/5 (11 sons)



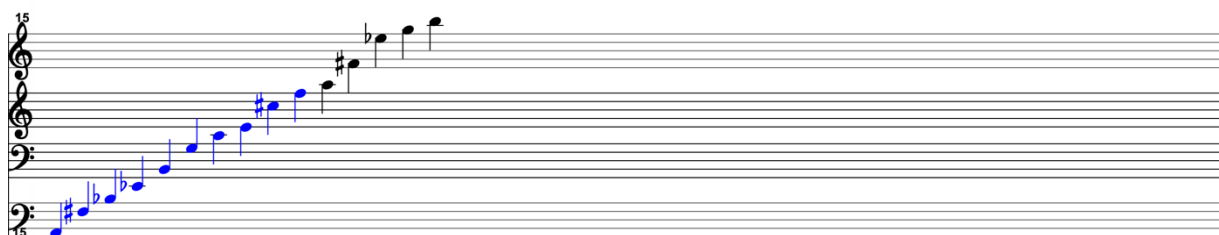
Arp 5/5 (7 sons)



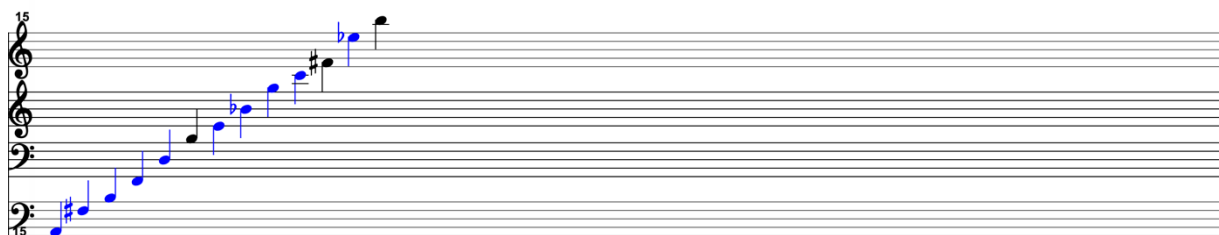
Arp 2/6 (8 sons)



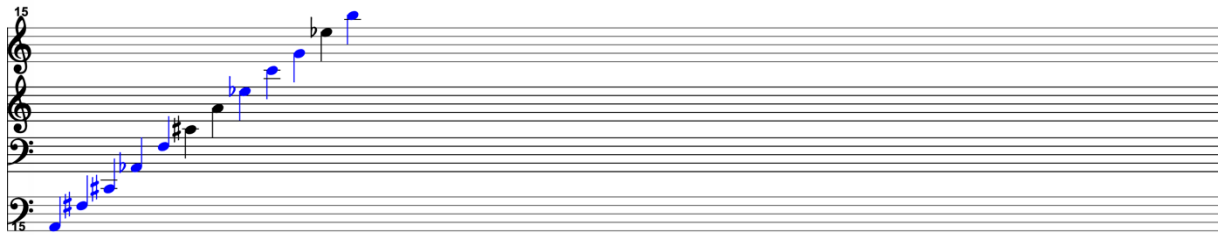
Arp 3/6 (10 sons in a row)



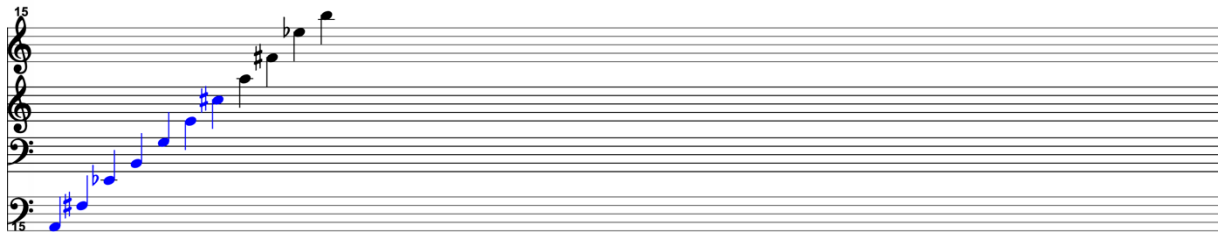
Arp 4/6 (10 sons)



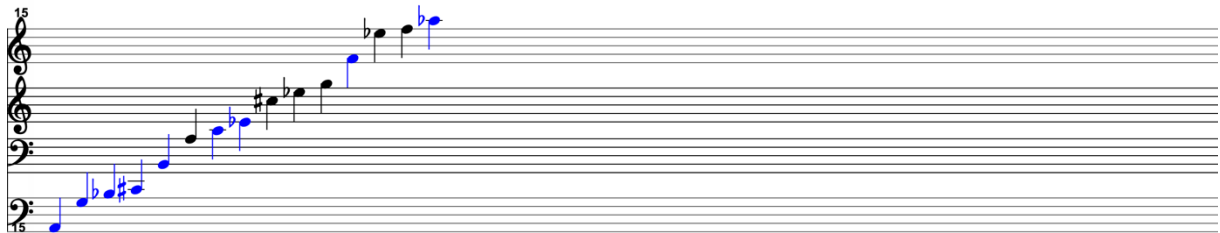
Arp 5/6 (9 sons)



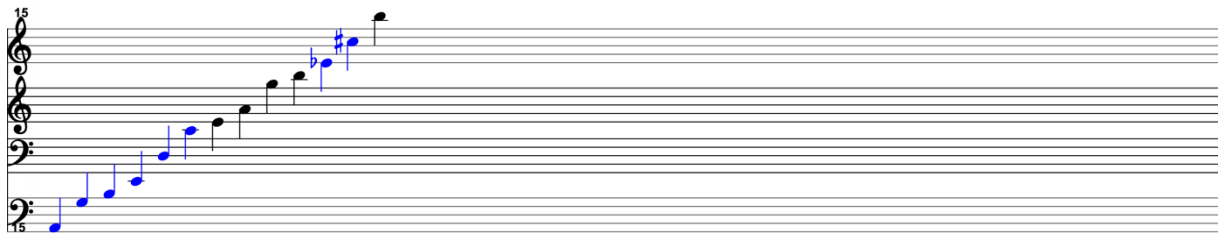
Arp 6/6 (7 sons in a row)



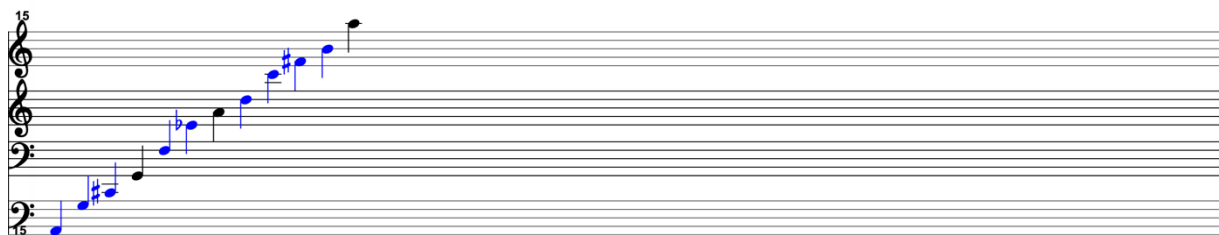
Arp 2/7 (9 sons)



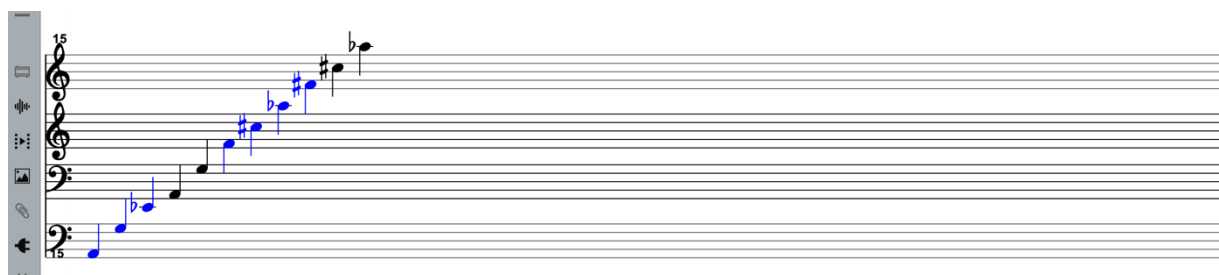
Arp 3/7 (8 sons)



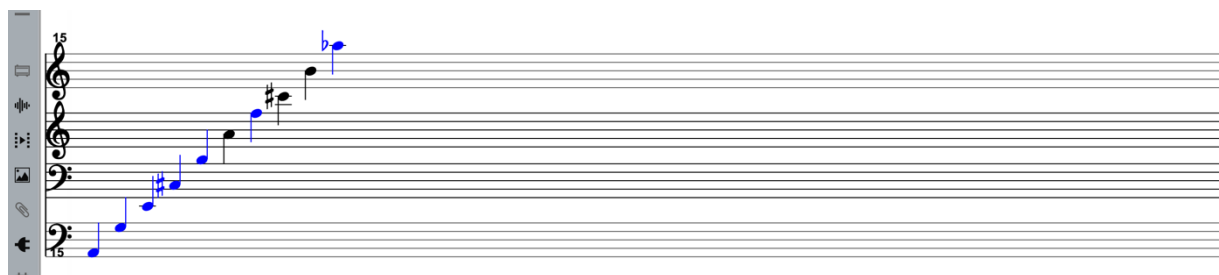
Arp 4/7 (9 sons)



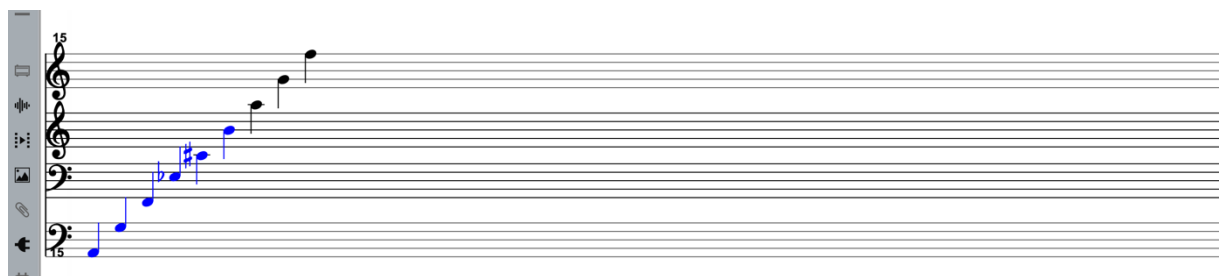
Arp 5/7 (7 sons)



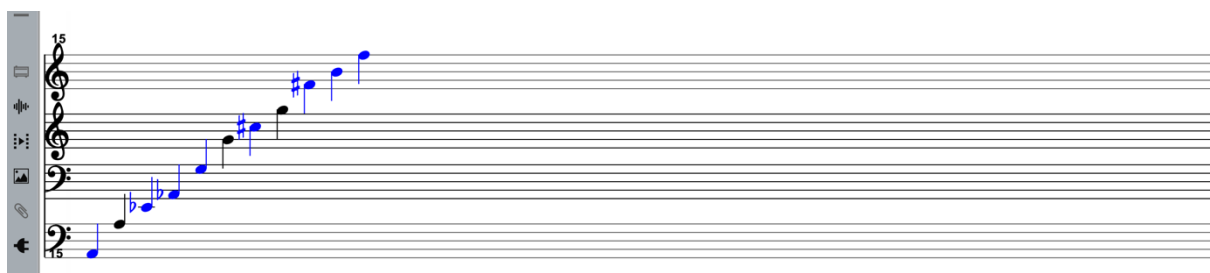
Arp 6/7 (7 sons)



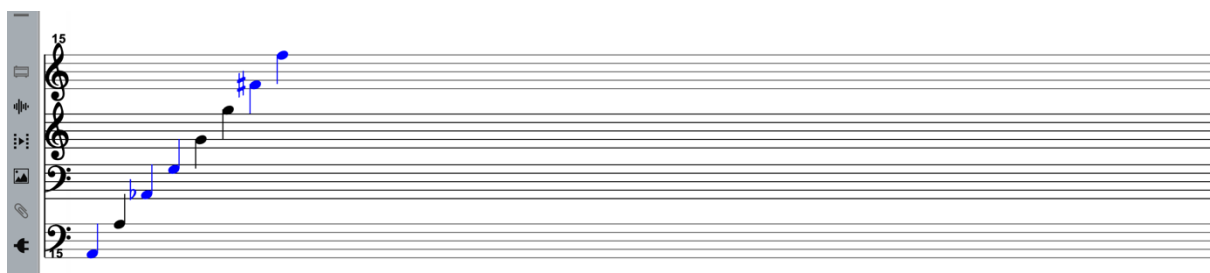
Arp 7/7 (6 sons in a row)



Arp 4/8 (8 sons)



Arp 8/8 (5 sons, non octaviant, 8J7M7M8J8J7M7M)



Modéchelle 9b

-u-u-uu

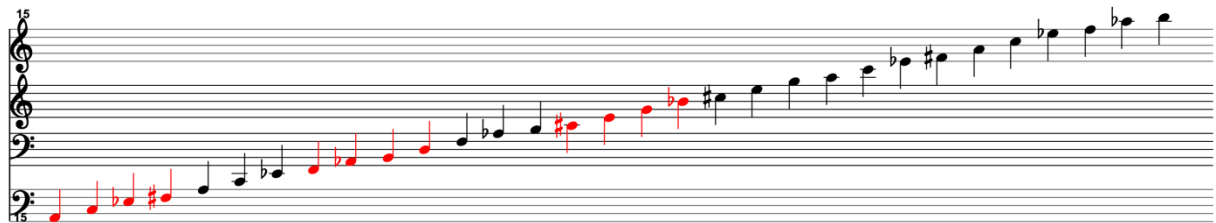
(7m / 8 à 12 sons / 5 octaves / 6 permutations / 9 transpositions)



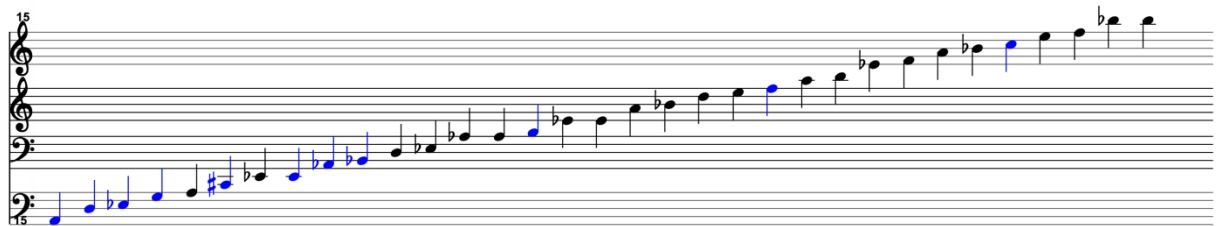
Arp 1/2 (12 sons)



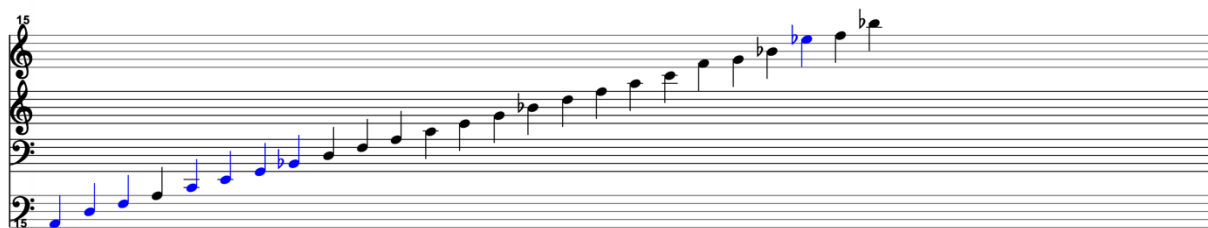
Arp 2/2 (12 sons)



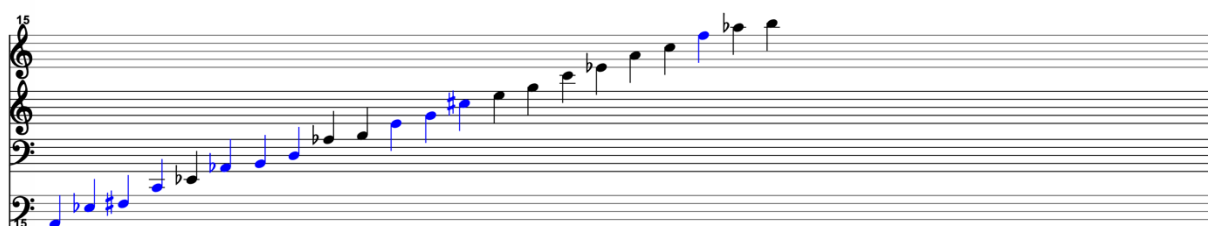
Arp 1/3 (11 sons)



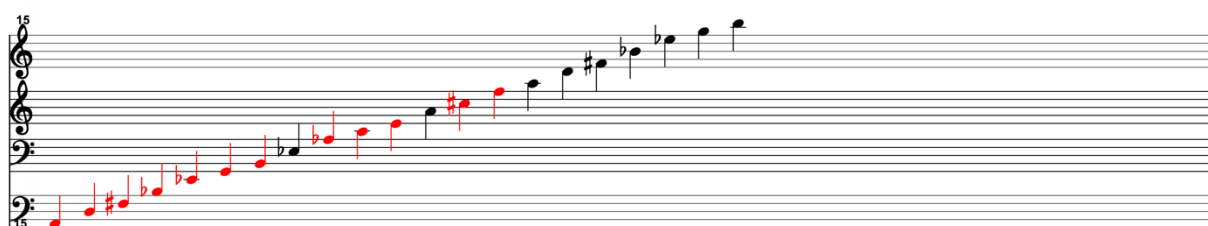
Arp 2/3 (8 sons)



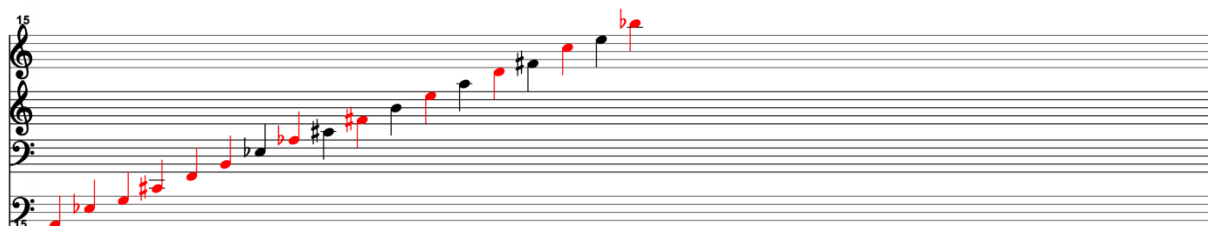
Arp 2/4 (11 sons)



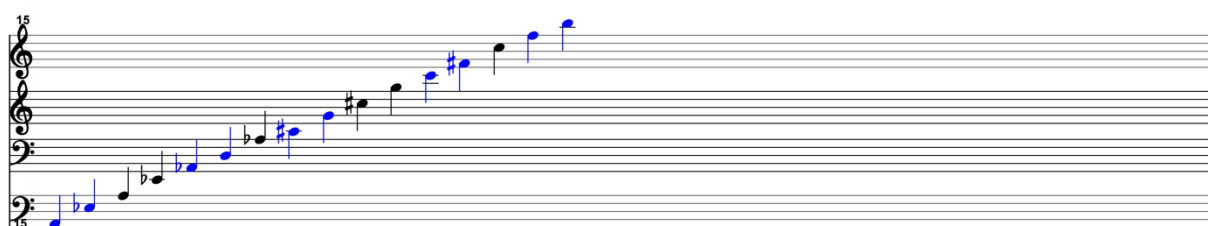
Arp 3/3 (12 sons)



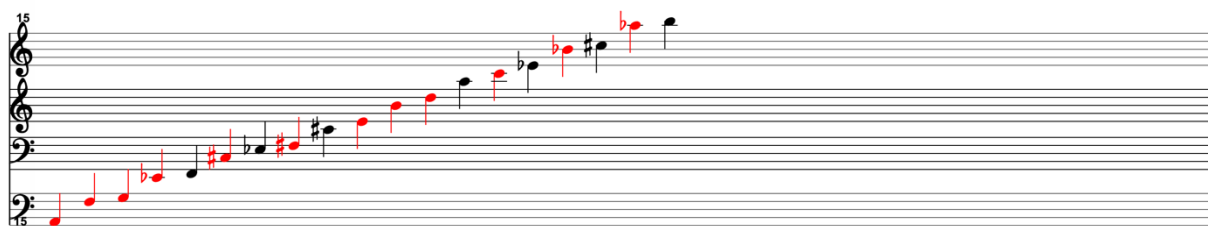
Arp 3/4 (12 sons)



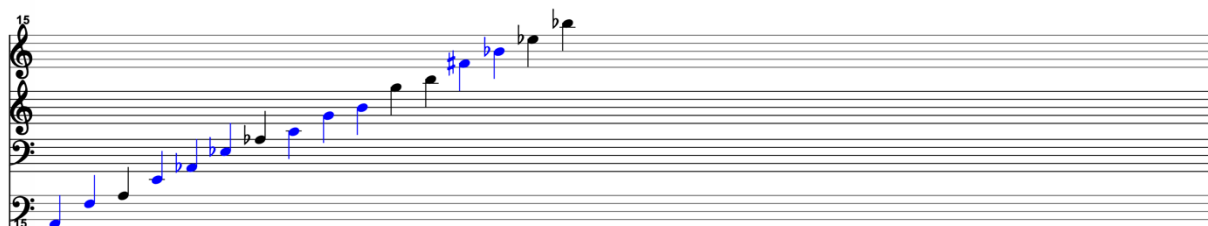
Arp 4/4 (10 sons)



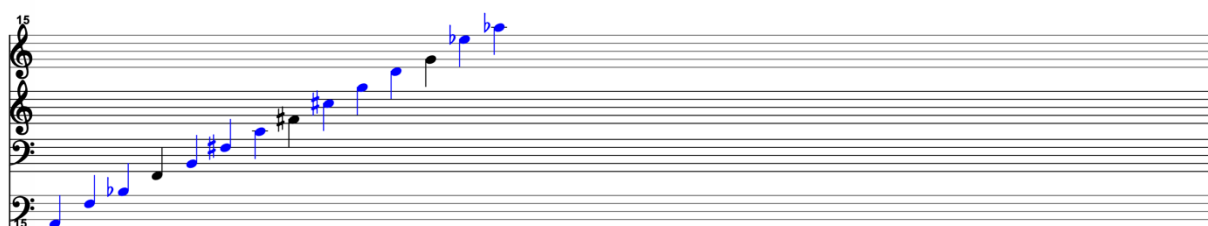
Arp 2/5 (12 sons)



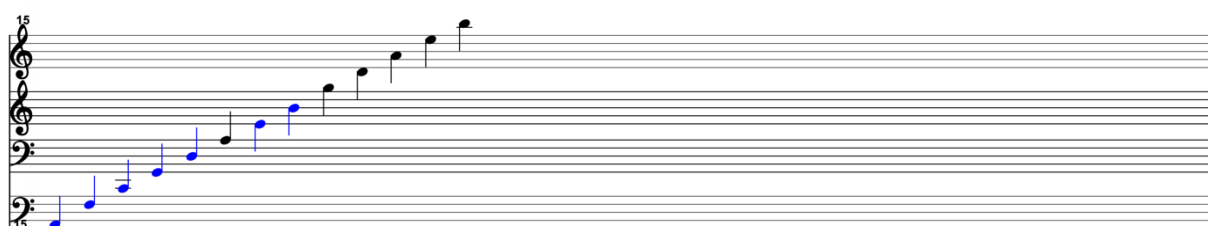
Arp 3/5 (10 sons)



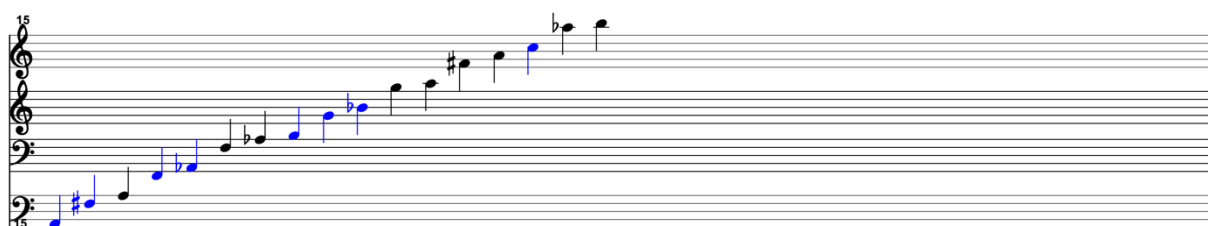
Arp 4/5 (11 sons)



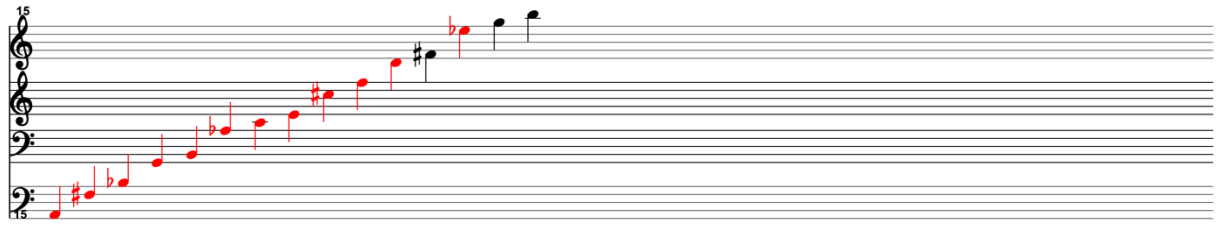
Arp 5/5 (7 sons)



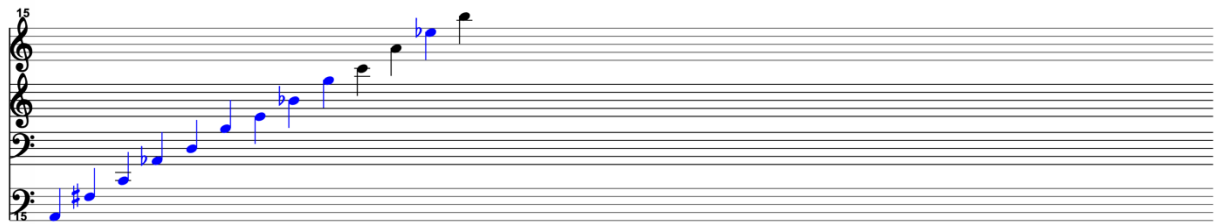
Arp 2/6 (8 sons)



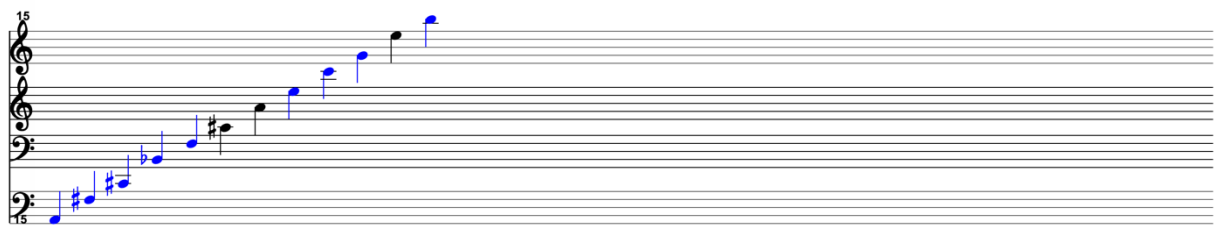
Arp 3/6 (12 sons = 11 in a row + 1)



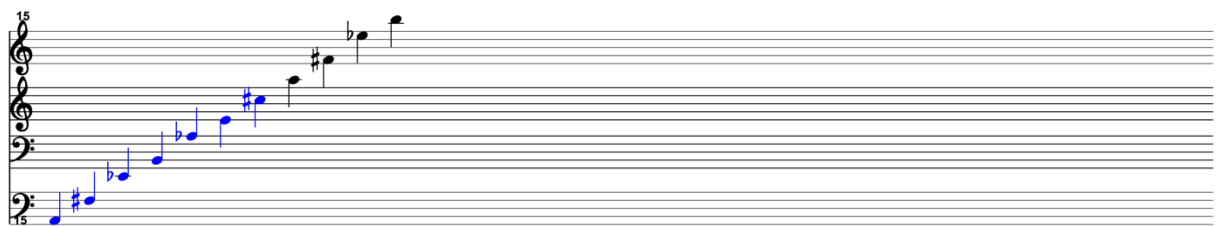
Arp 4/6 (10 sons = 9 in a row + 1)



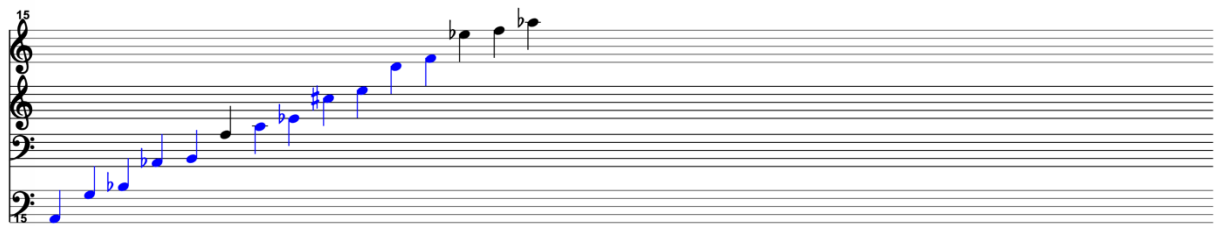
Arp 5/6 (9 sons)



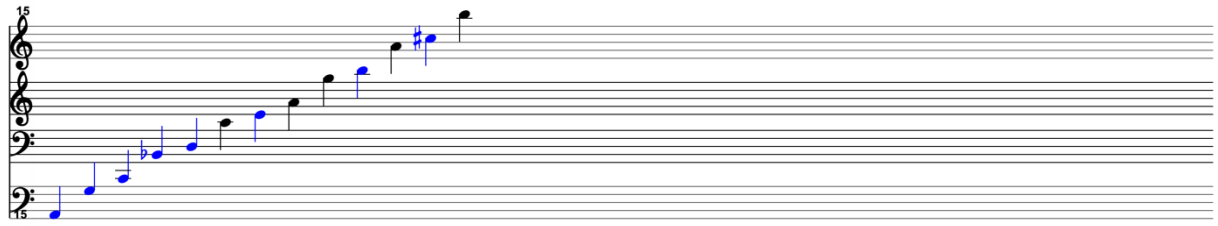
Arp 6/6 (7 sons in a row)



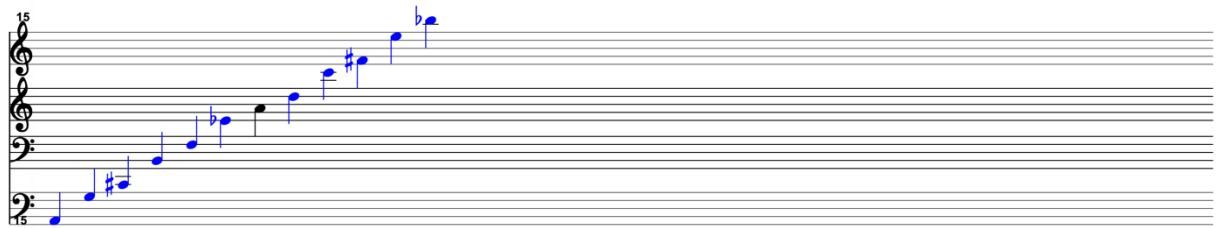
Arp 2/7 (11 sons)



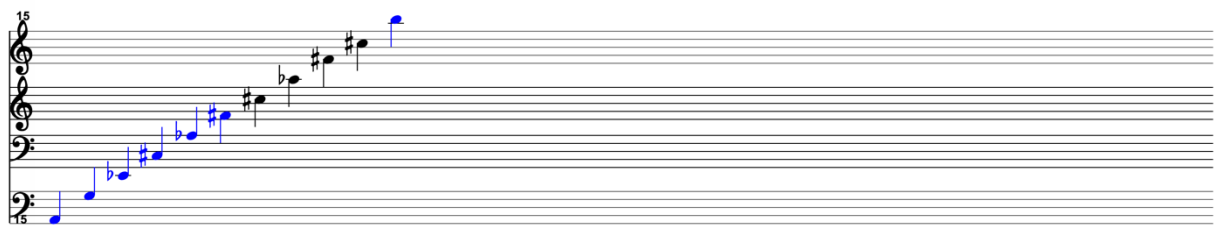
Arp 3/7 (8 sons)



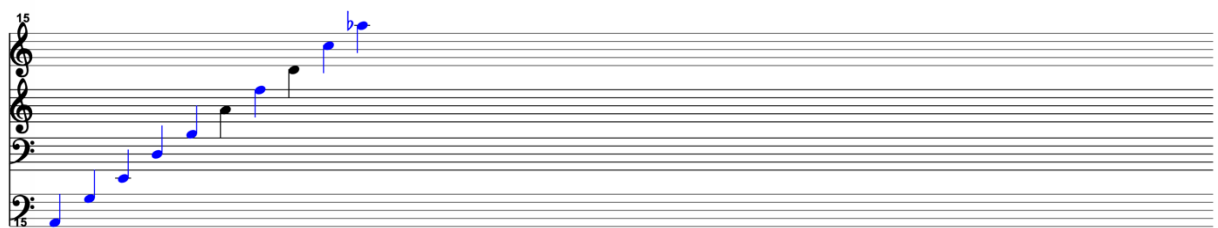
Arp 4/7 (11 sons = 6 + 5)



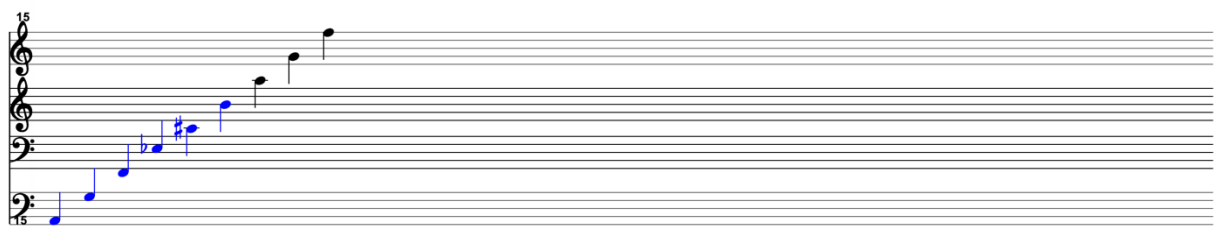
Arp 5/7 (7 sons = 6 in a row + 1)



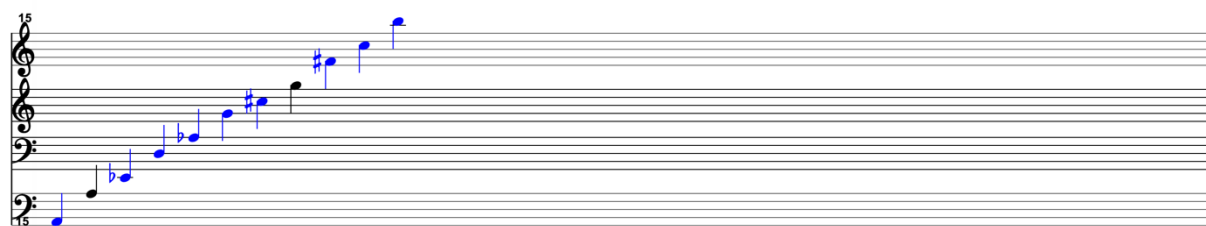
Arp 6/7 (8 sons)



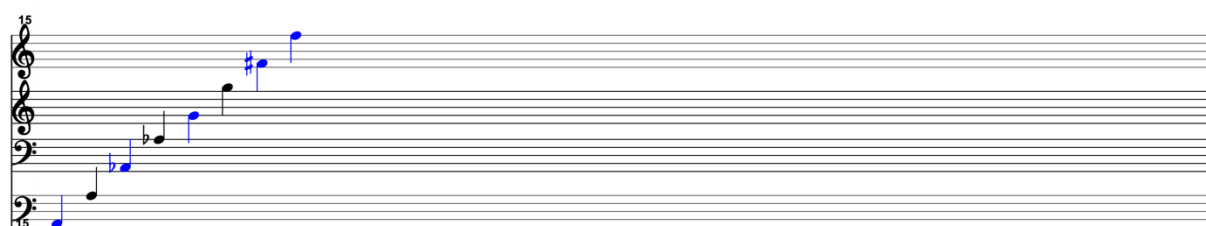
Arp 7/7 (6 sons in a row)



Arp 4/8 (9 sons)



Arp 8/8 (5 sons, non-octaviant = 8J7M x3 +7M)



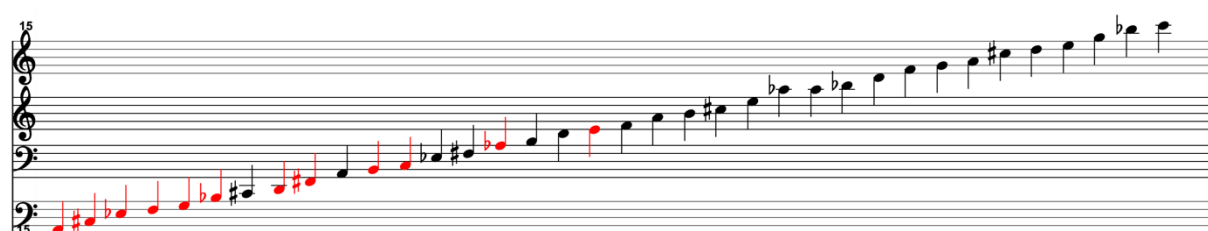
Modéchelle 10a

--uu--u

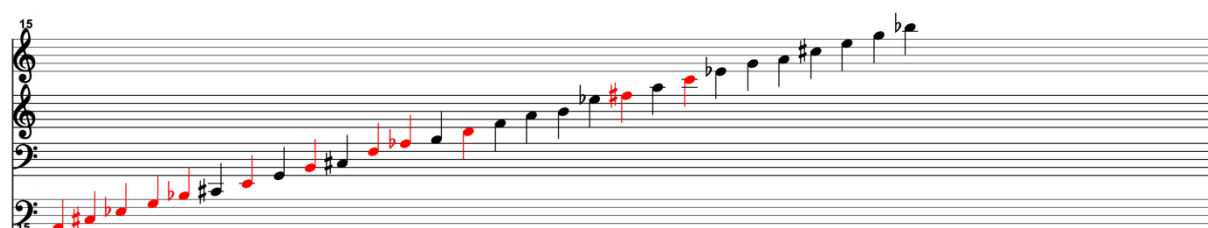
(7M / 8 à 12 sons / 12 octaves / 6 permutations / 10 transpositions)



Arp 1/2 (12 sons)



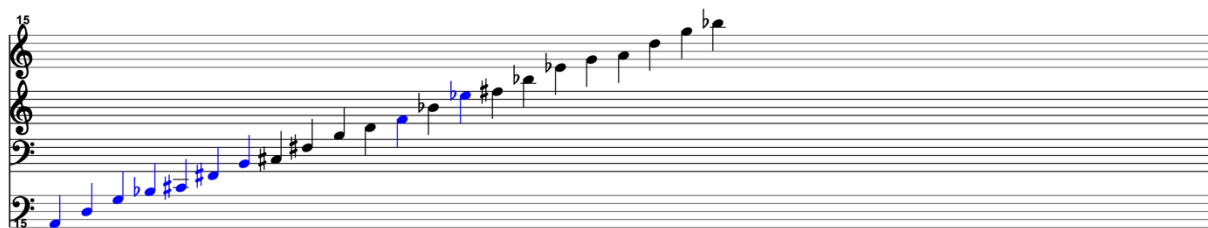
Arp 2/2 (12 sons)



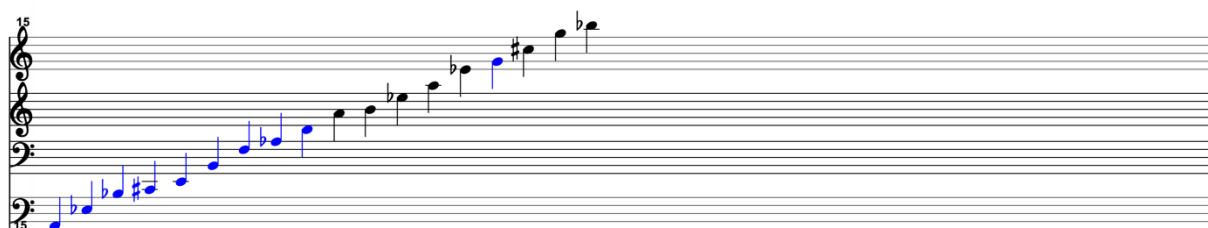
Arp 1/3 (7 sons)



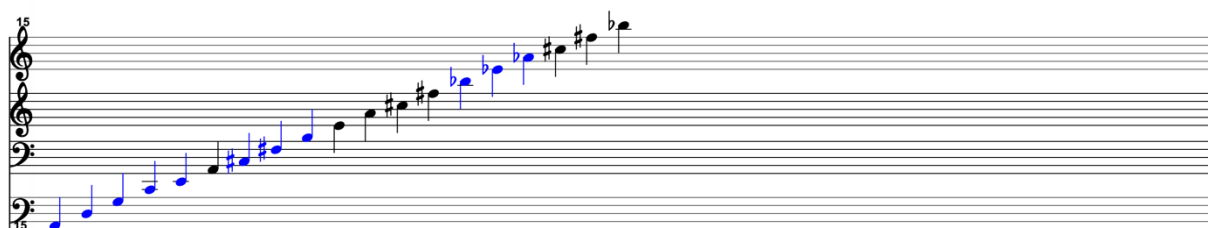
Arp 2/3 (9 sons)



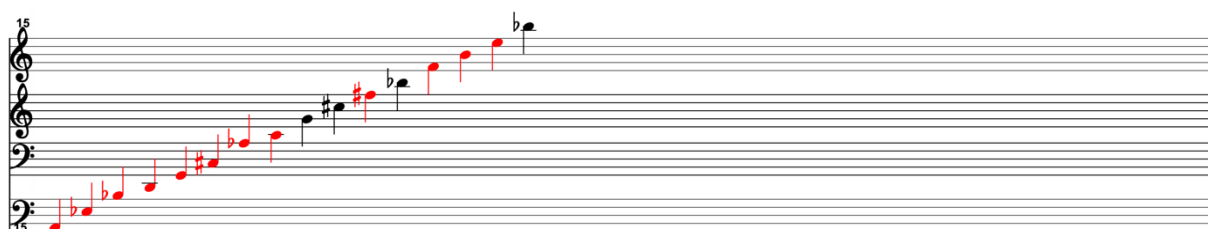
Arp 2/4 (10 sons)



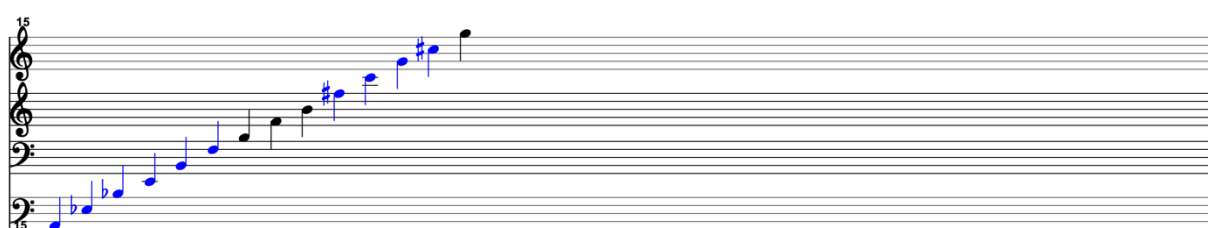
Arp 3/3 (11 sons)



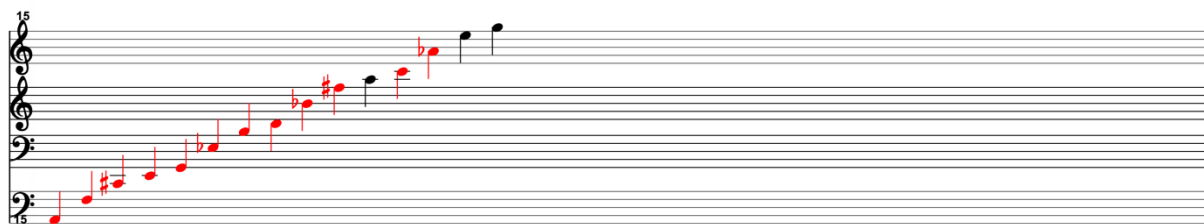
Arp 3/4 (12 sons)



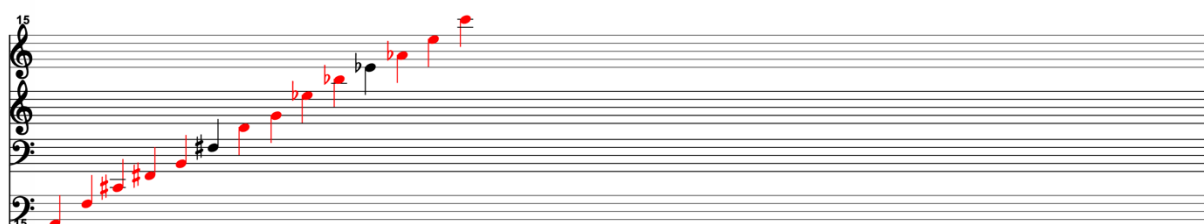
Arp 4/4 (10 sons)



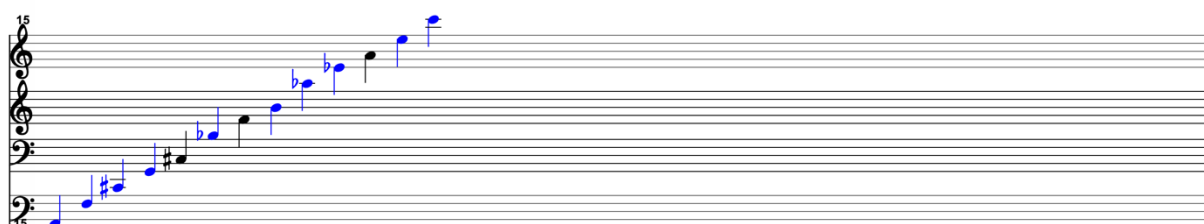
Arp 2/5 (12 sons = 10 in a row + 2)



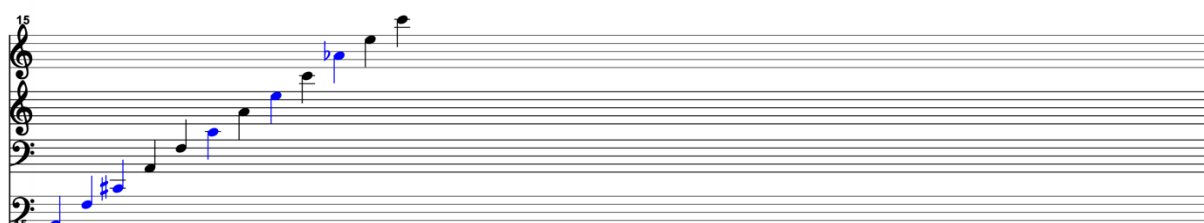
Arp 3/5 (12 sons)



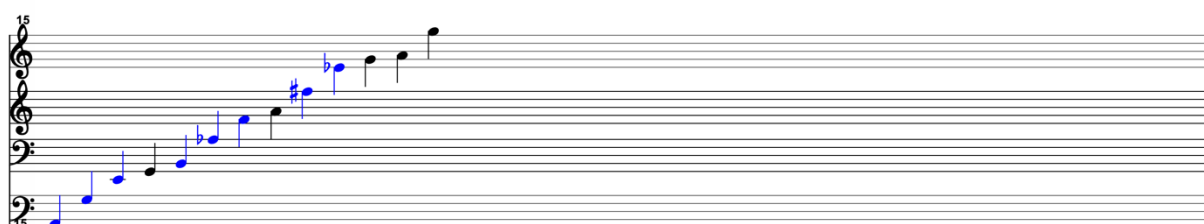
Arp 4/5 (10 sons)



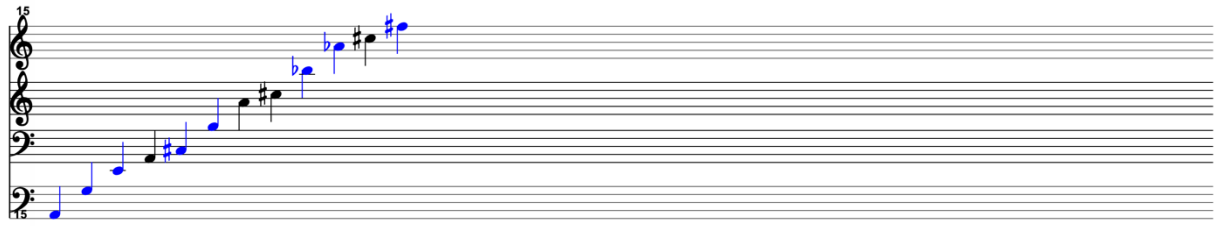
Arp 5/5 (6 sons)



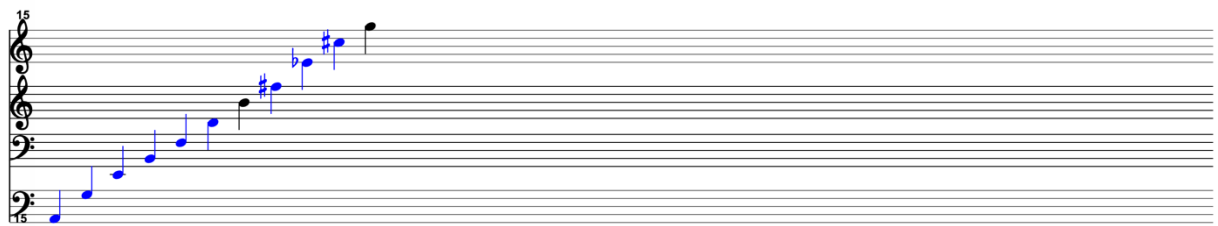
Arp 2/6 (8 sons)



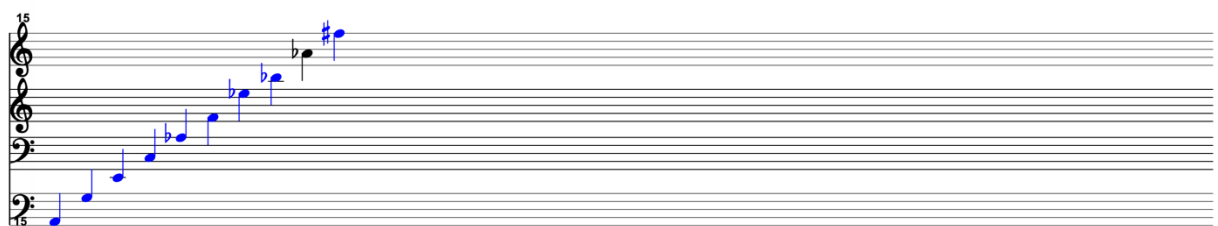
Arp 3/6 (8 sons)



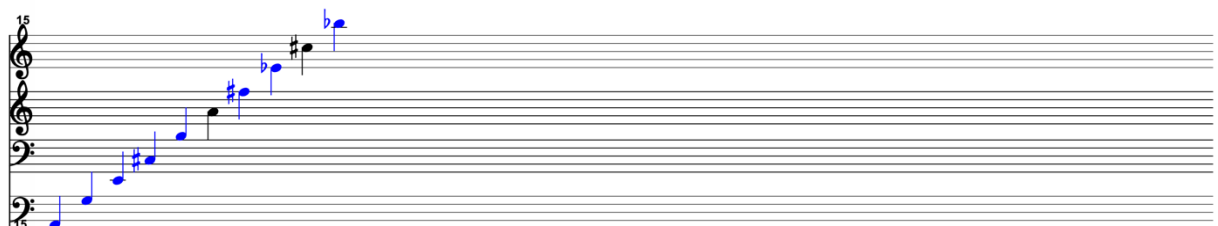
Arp 4/6 (9 sons)



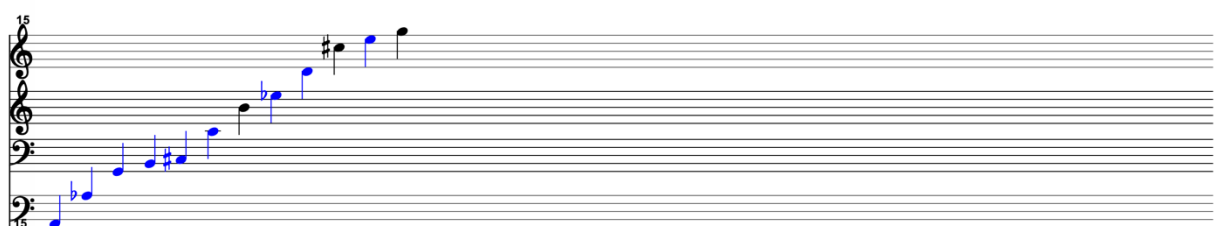
Arp 5/6 (9 sons)



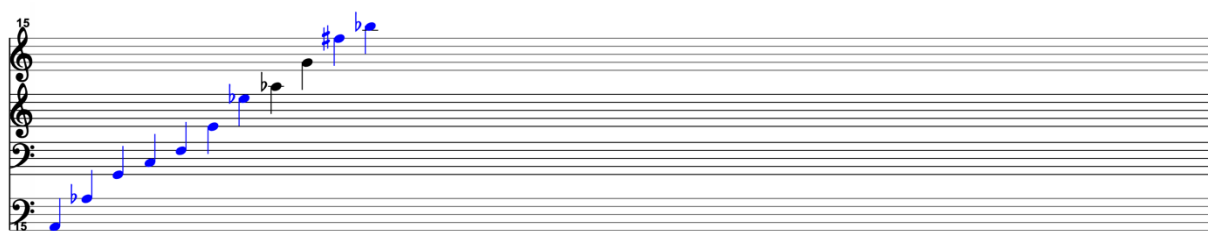
Arp 6/6 (8 sons)



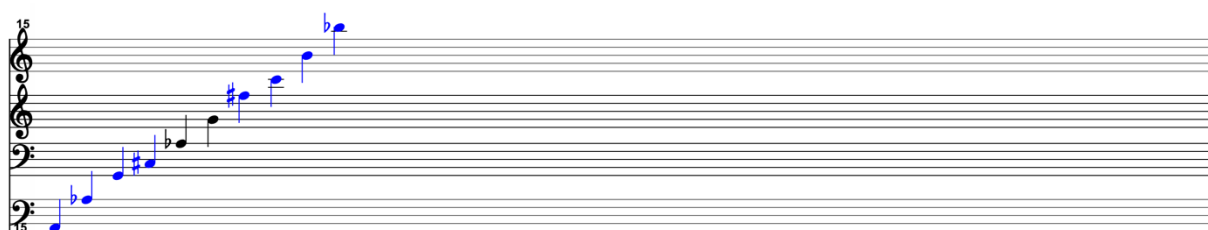
Arp 2/7 (9 sons)



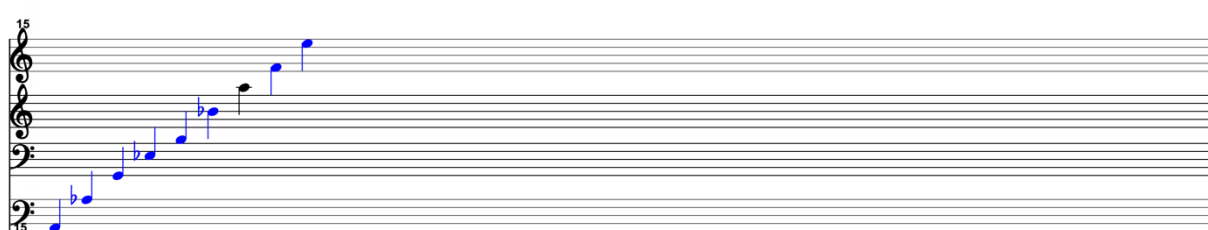
Arp 3/7 (9 sons)



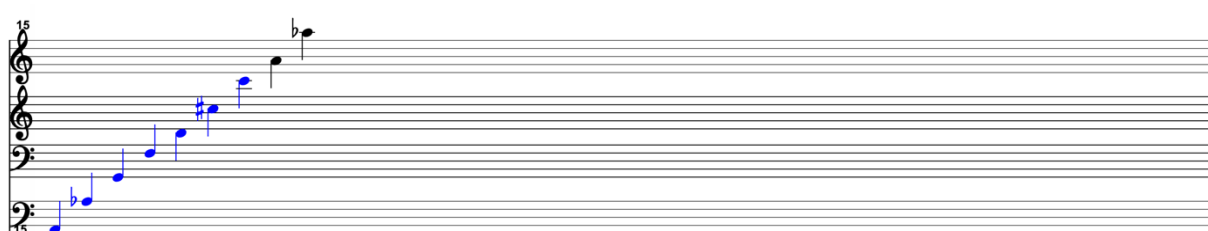
Arp 4/7 (8 sons)



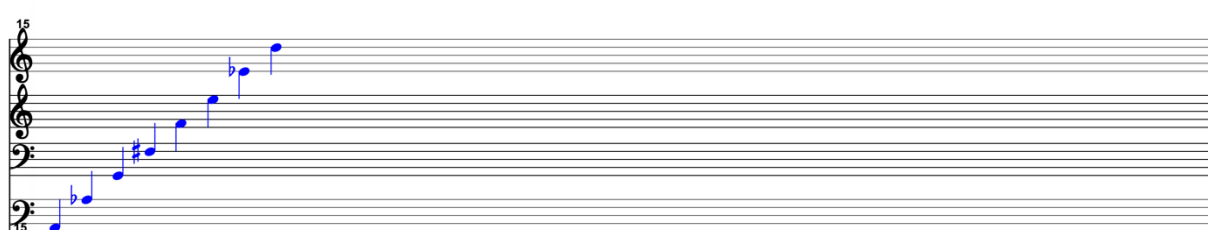
Arp 5/7 (8 sons)



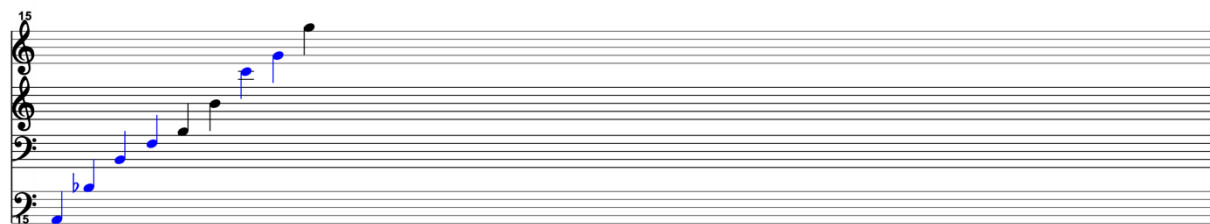
Arp 6/7 (7 sons)



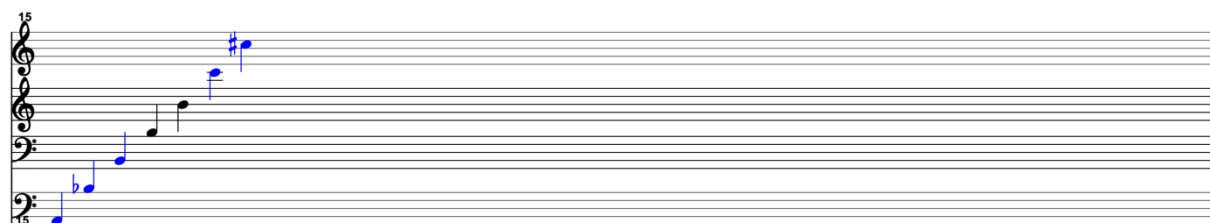
Arp 7/7 (8 sons)



Arp 4/8 (6 sons)



Arp 8/8 (5 sons, non-octaviant)



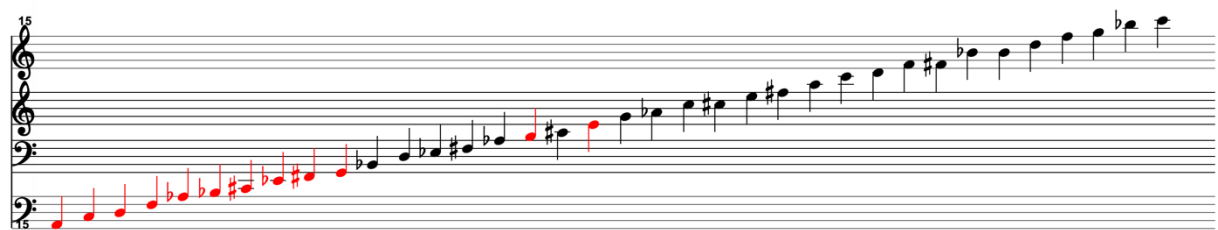
Modéchelle 10b

-u--u-u

(7M / 8 à 12 sons / 12 octaves / 6 permutations / 10 transpositions)



Arp 1/2 (12 sons)



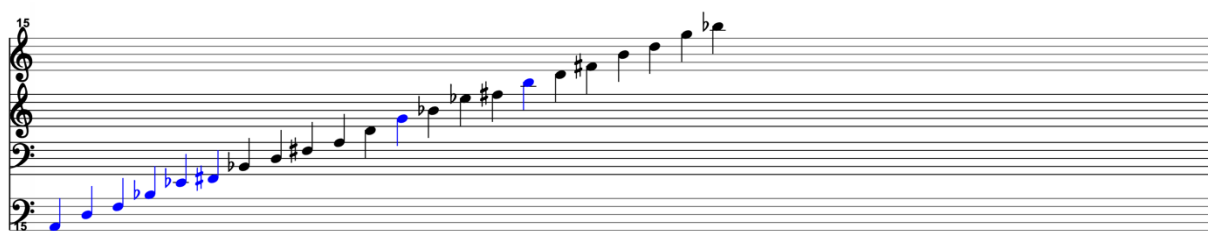
Arp 2/2 (12 sons)



Arp 1/3 (9 sons)



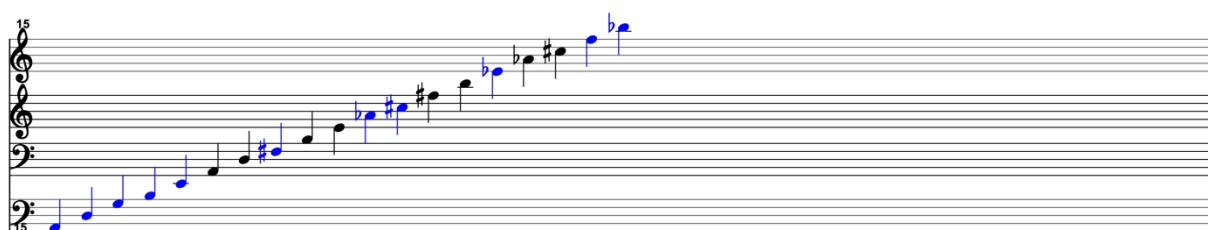
Arp 2/3 (8 sons)



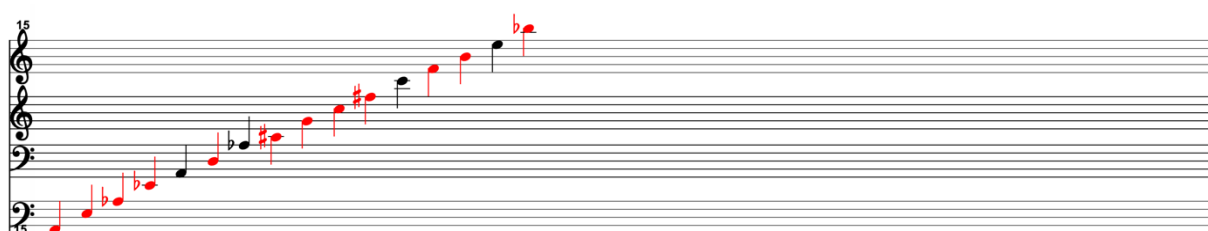
Arp 2/4 (11 sons)



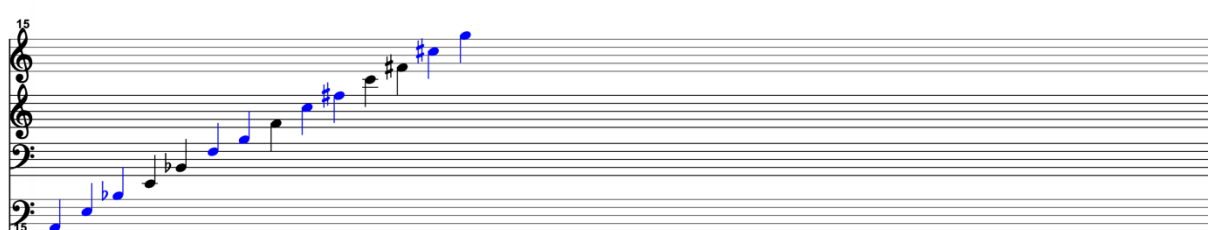
Arp 3/3 (11 sons)



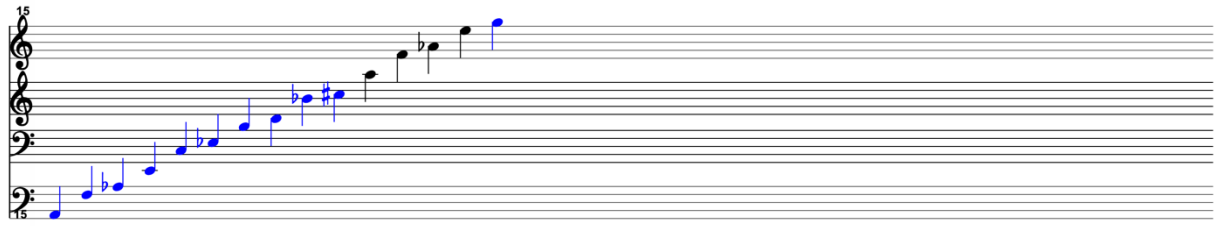
Arp 3/4 (12 sons)



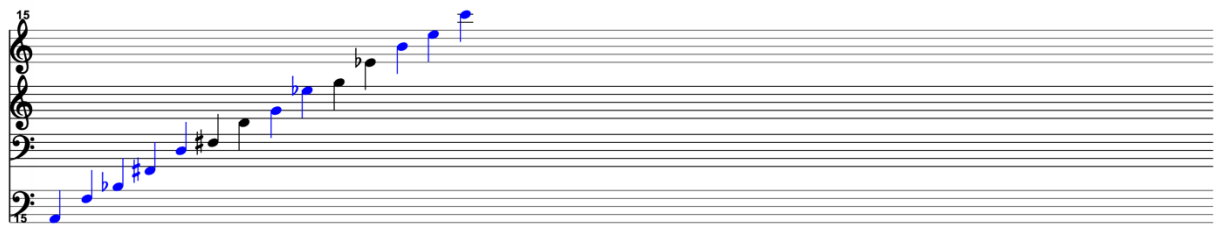
Arp 4/4 (9 sons)



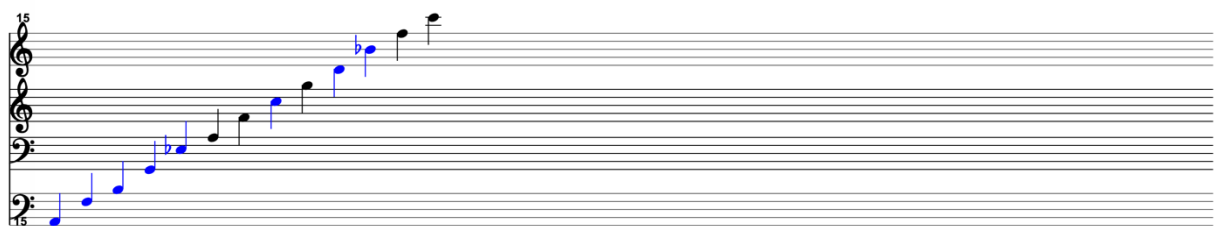
Arp 2/5 (11 sons = 10 in a row + 1)



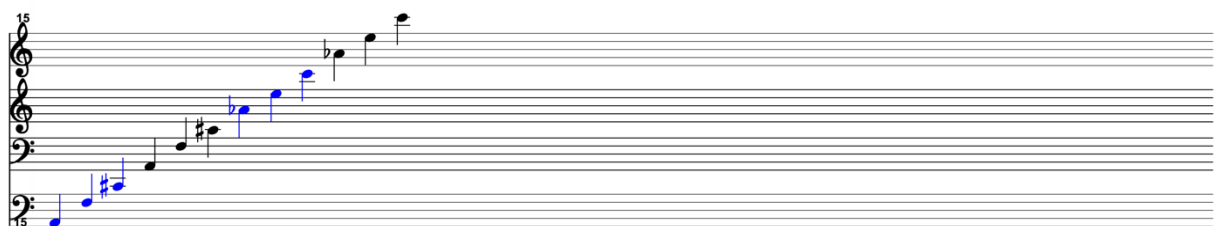
Arp 3/5 (10 sons)



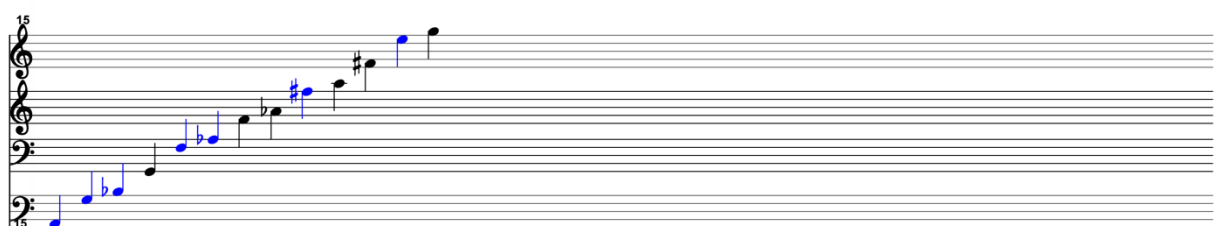
Arp 4/5 (8 sons)



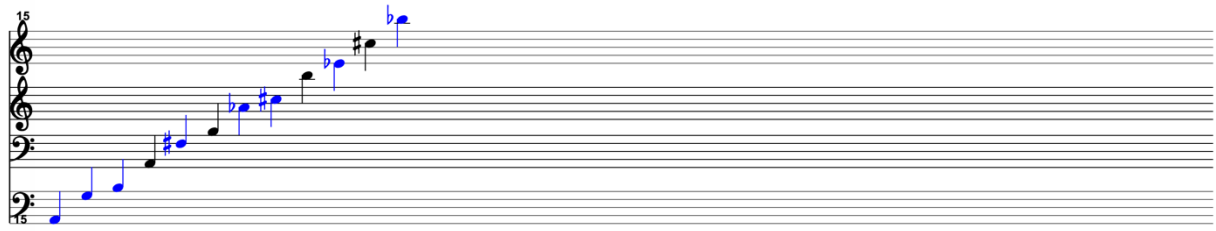
Arp 5/5 (6 sons)



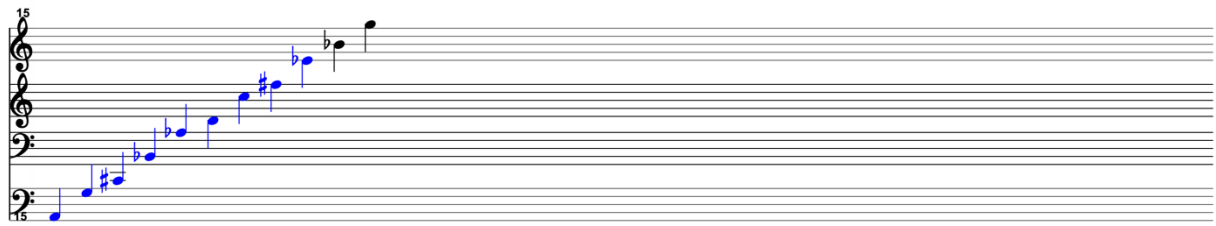
Arp 2/6 (7 sons)



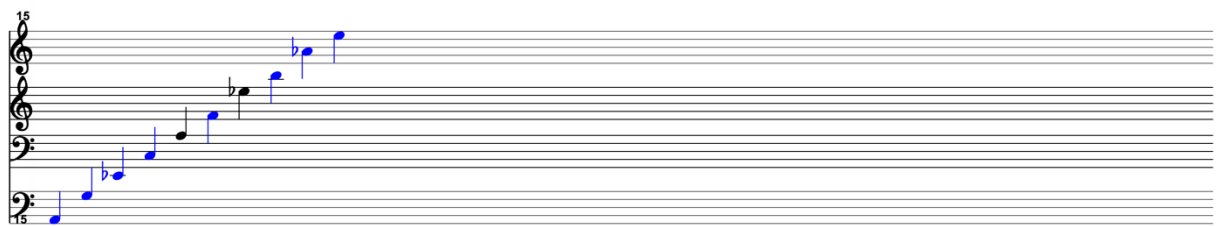
Arp 3/6 (8 sons)



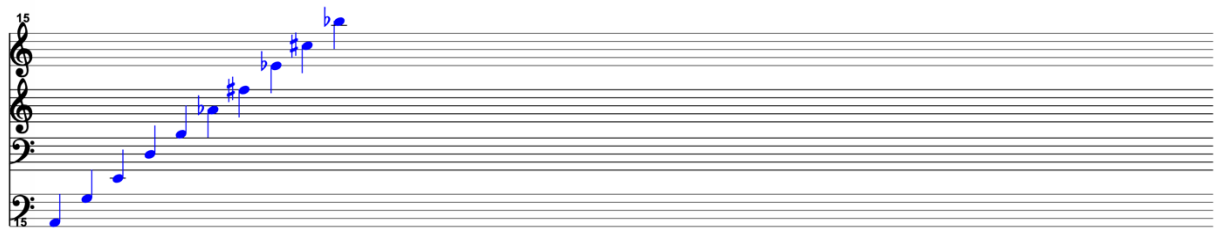
Arp 4/6 (9 sons in a row)



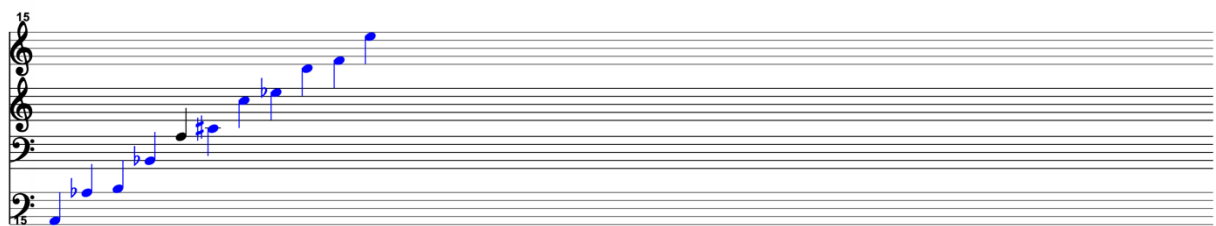
Arp 5/6 (8 sons)



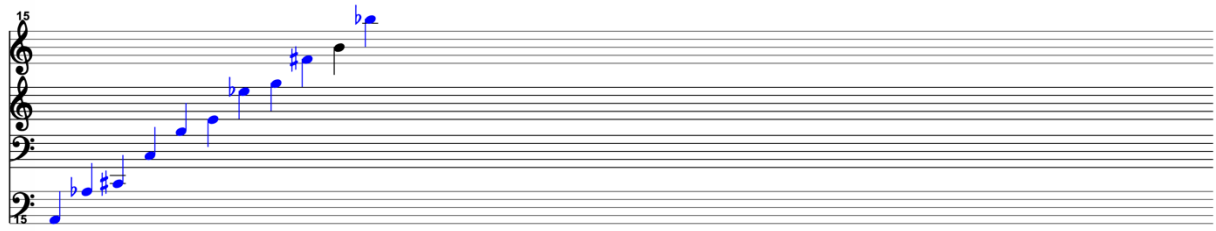
Arp 6/6 (10 sons in a row)



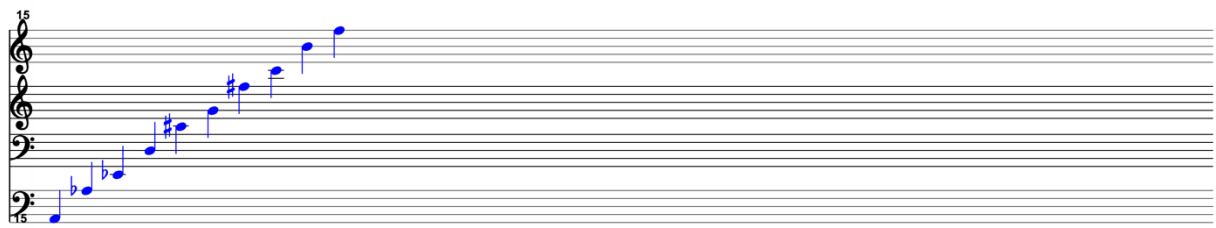
Arp 2/7 (10 sons)



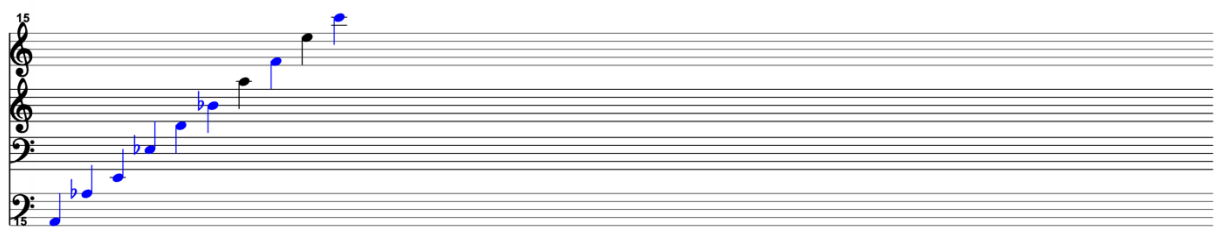
Arp 3/7 (10 sons = 9 in a row + 1)



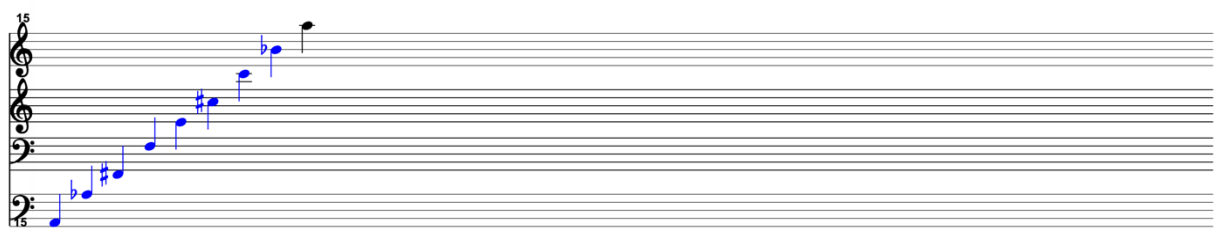
Arp 4/7 (10 sons in a row)



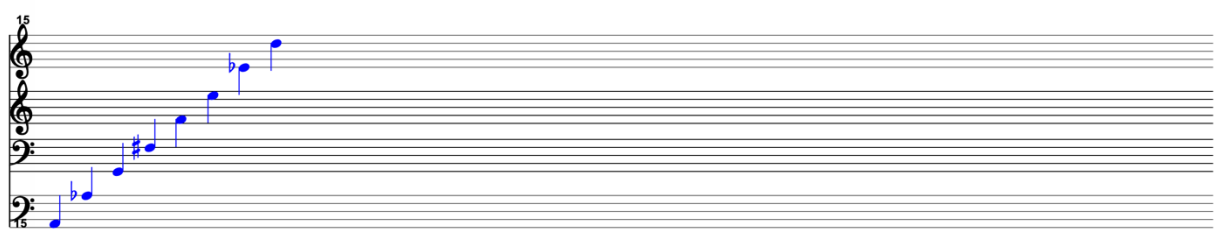
Arp 5/7 (8 sons)



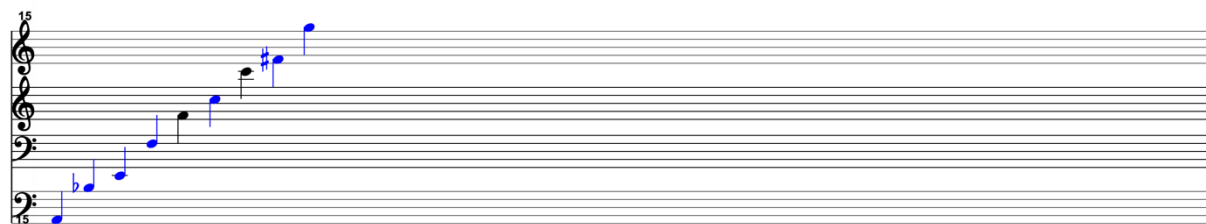
Arp 6/7 (8 sons in a row)



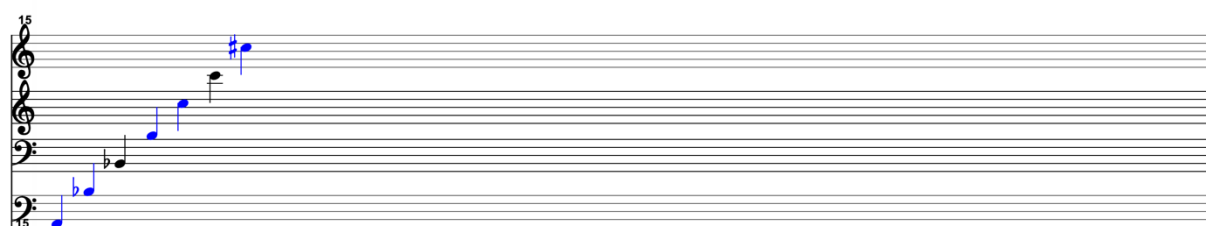
Arp 7/7 (8 sons in a row)



Arp 4/8 (7 sons)



Arp 8/8 (non-octaviant, 5 sons = 9m8J9m9m8J9m)



Modéchelle 10c

-uu-uu-u

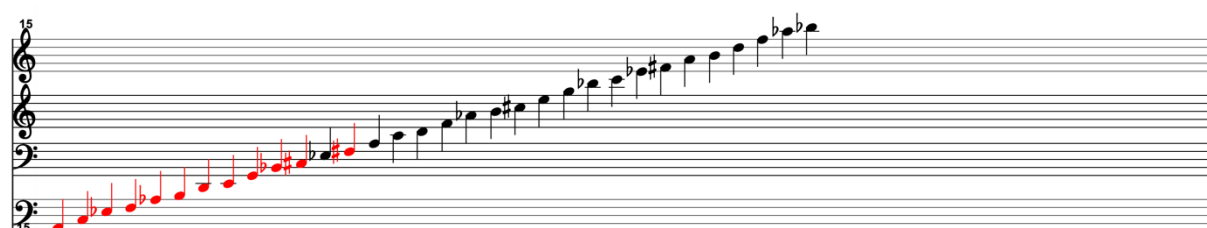
(7M / 8 à 12 sons / 12 octaves / 7 permutations / 10 transpositions)



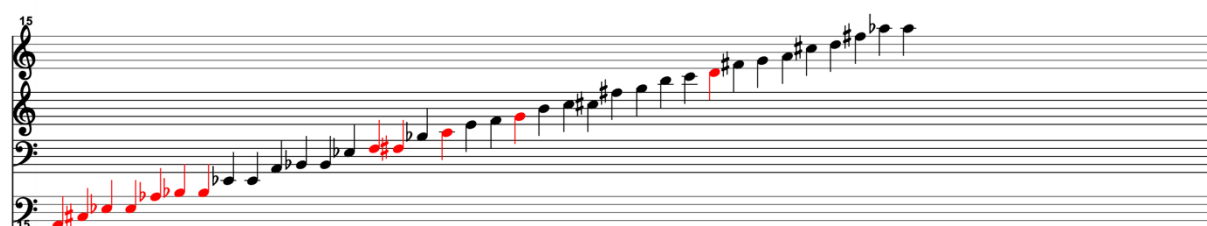
Arp 1/2 (12 sons)



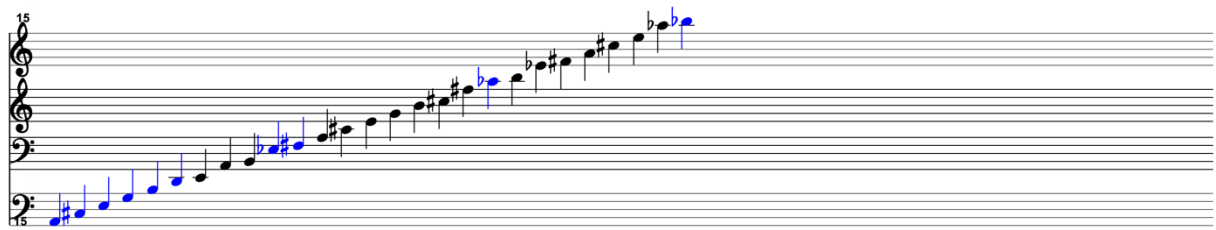
Arp 2/2 (12 sons = 11 in a row + 1)



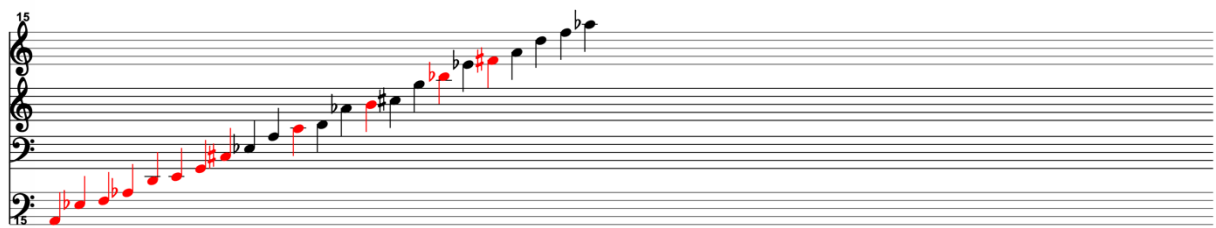
Arp 1/3 (12 sons)



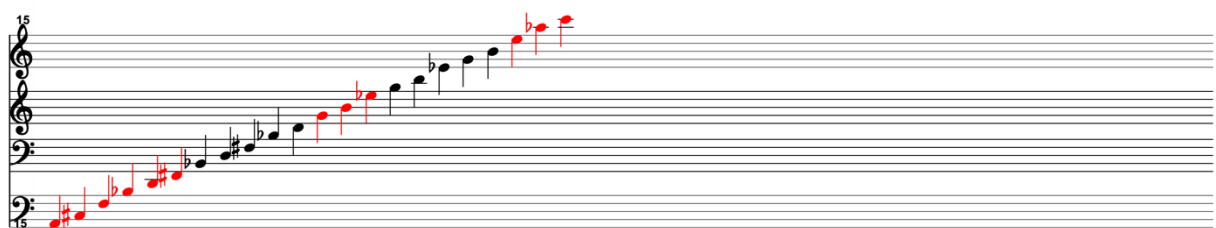
Arp 2/3 (10 sons)



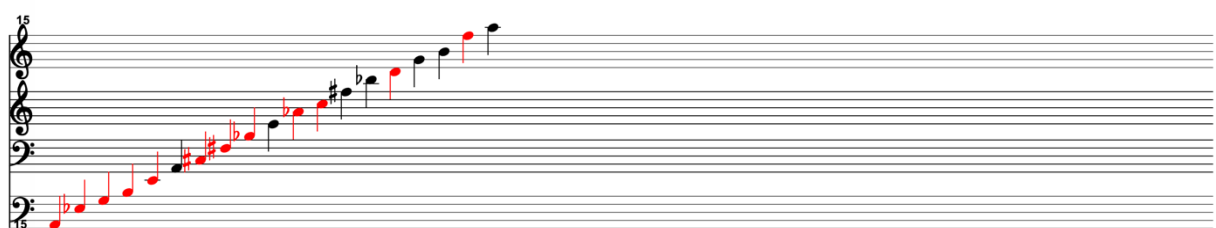
Arp 2/4 (12 sons)



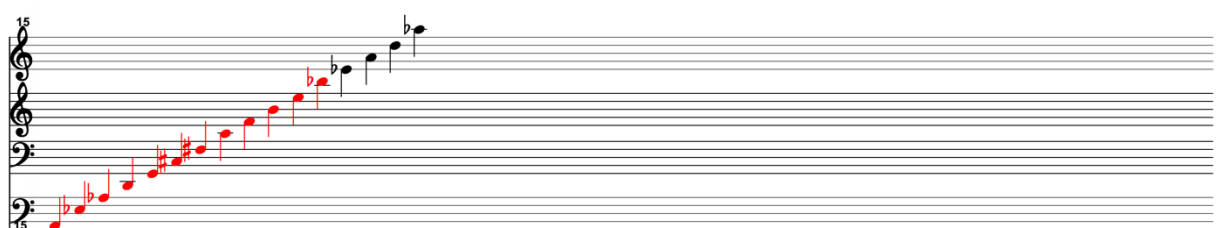
Arp 3/3 (12 sons)



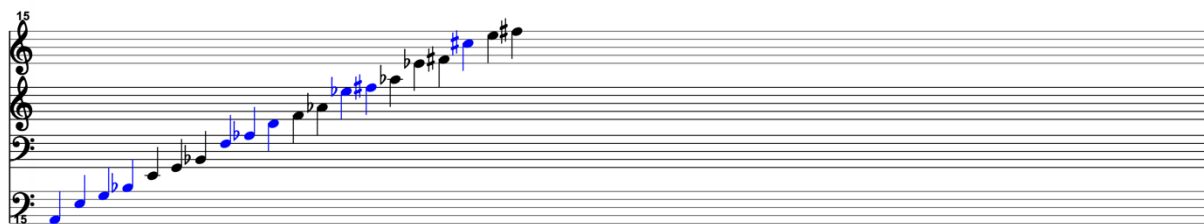
Arp 3/4 (12 sons)



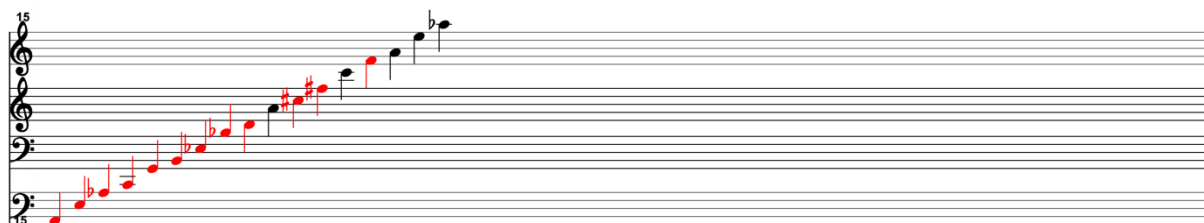
Arp 4/4 (12 sons in a row)



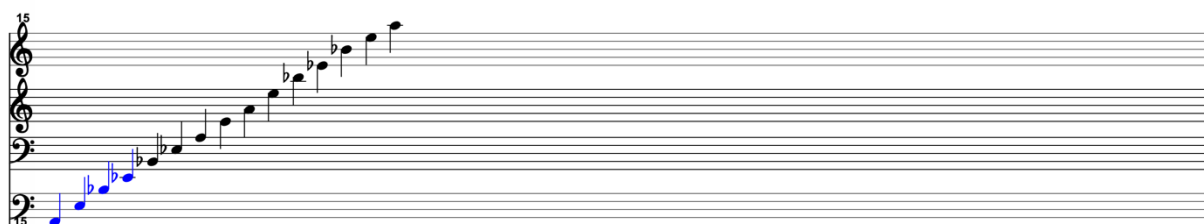
Arp 2/5 (10 sons)



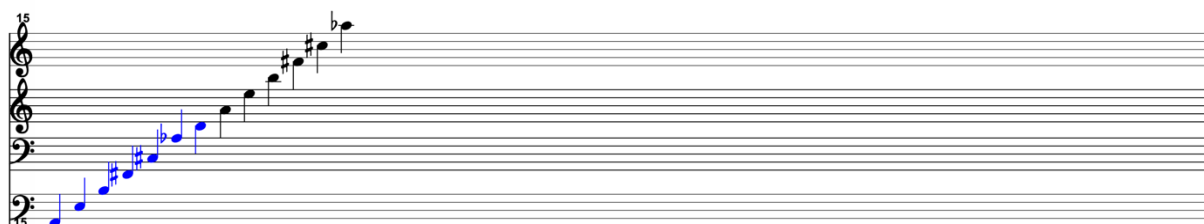
Arp 3/5 (12 sons)



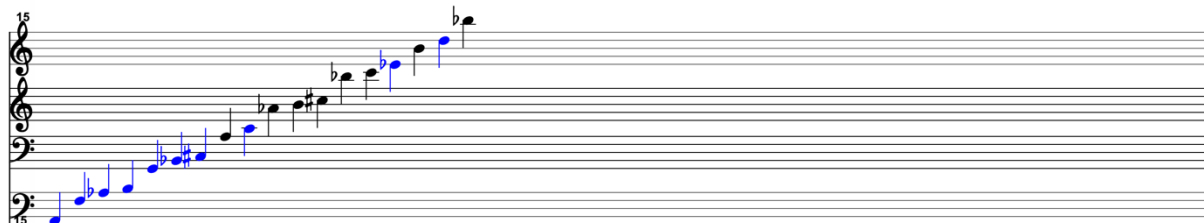
Arp 4/5 (4 sons = 5J4+4J5J4J4+5J4J5J4+4J5J4+4J)



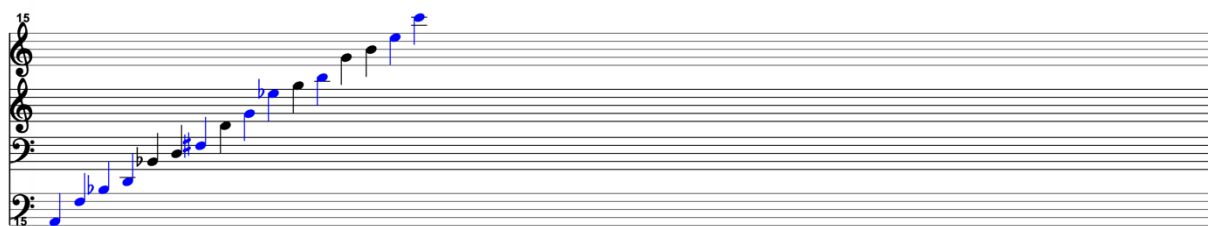
Arp 5/5 (7 sons in a row)



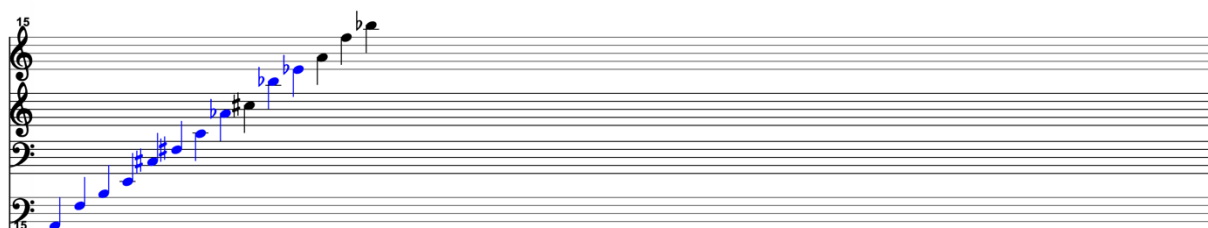
Arp 2/6 (10 sons)



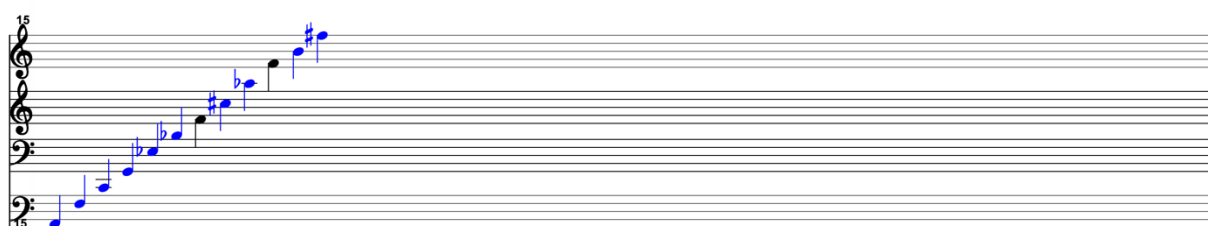
Arp 3/6 (10 sons)



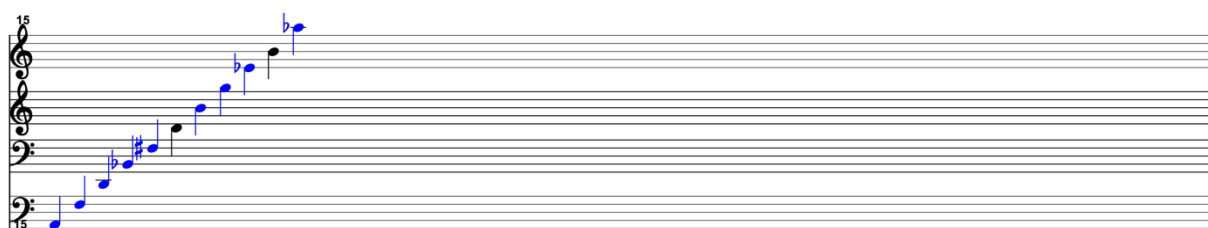
Arp 4/6 (10 sons)



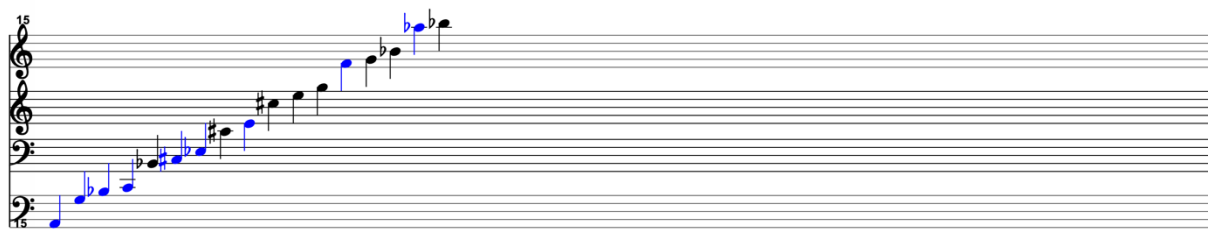
Arp 5/6 (10 sons)



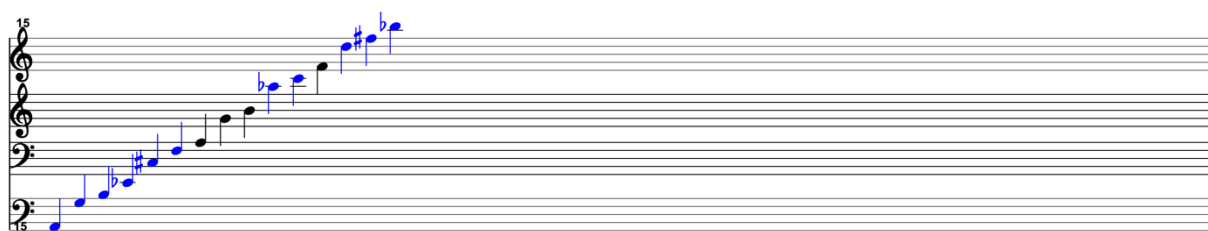
Arp 6/6 (9 sons)



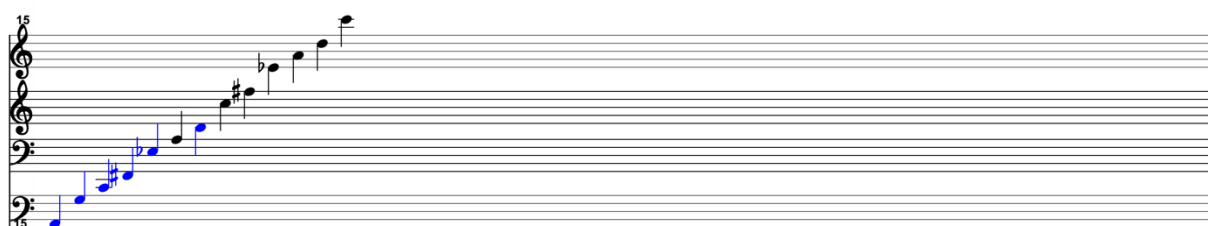
Arp 2/7 (9 sons)



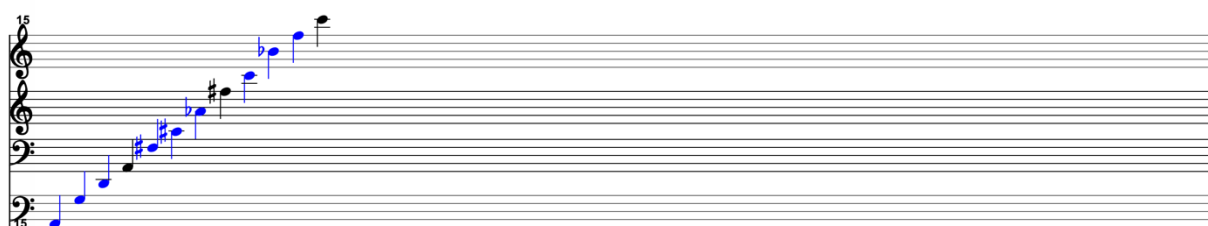
Arp 3/7 (11 sons)



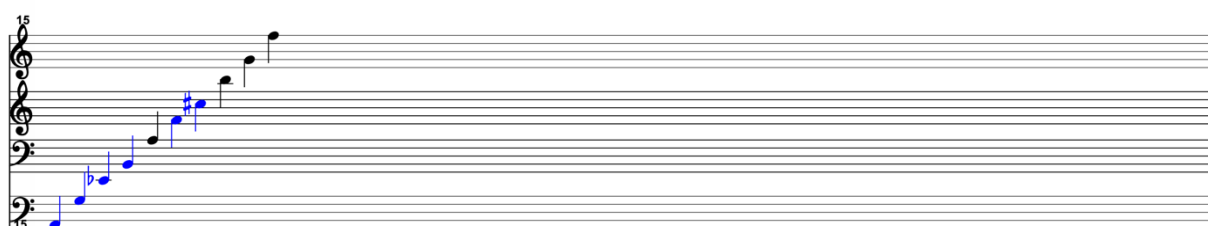
Arp 4/7 (6 sons)



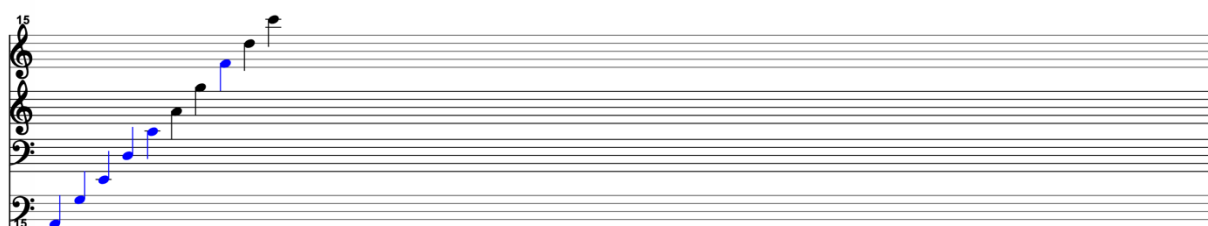
Arp 5/7 (9 sons)



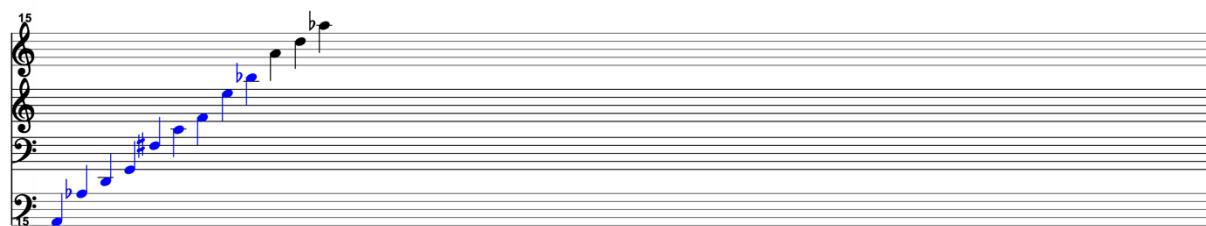
Arp 6/7 (6 sons)



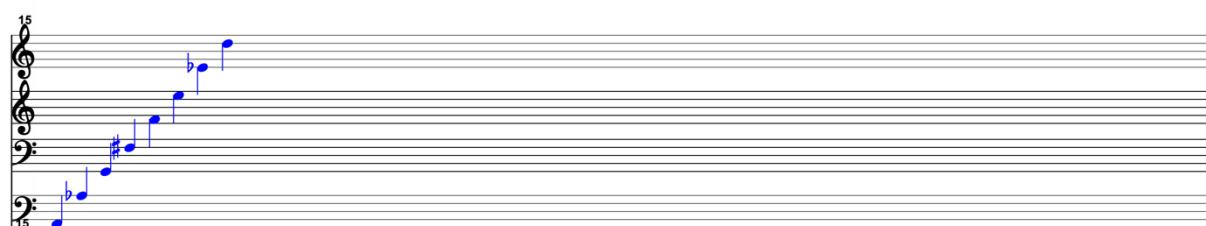
Arp 7/7 (6 sons)



Arp 4/8 (9 sons in a row)



Arp 8/8 (non-octaviant, 8 sons in a row)



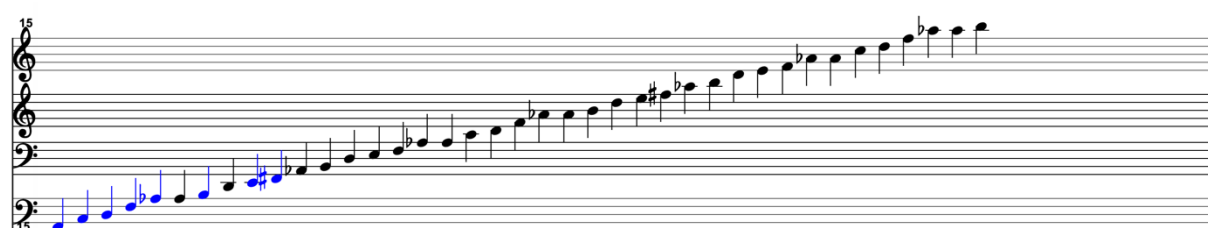
Modéchelle 11a

-u--uu-u

(8J / 8 sons / octaviant / 7 permutations / 11 transpositions)



Arp 1/2 (8 sons)



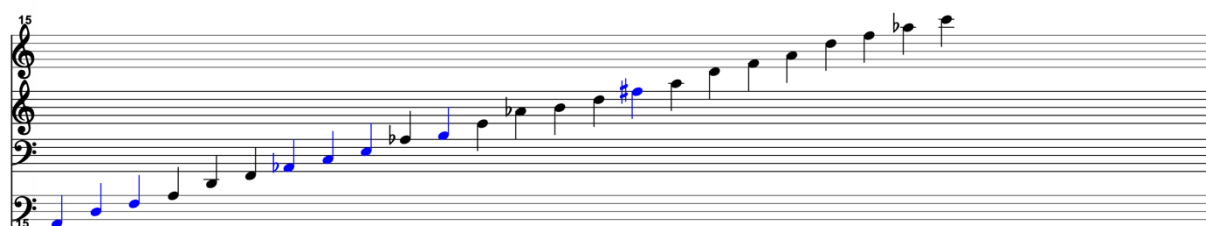
Arp 2/2 (4 sons = 3m3M2M3m)



Arp 1/3 (5 sons = 4J2M3M3M2M2M3M2m)



Arp 2/3 (8 sons)



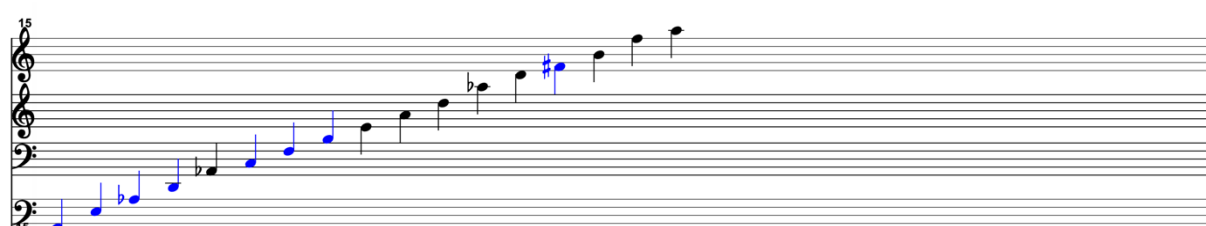
Arp 2/4 (4 sons = 5J2M4+4+3m3m4+3m)



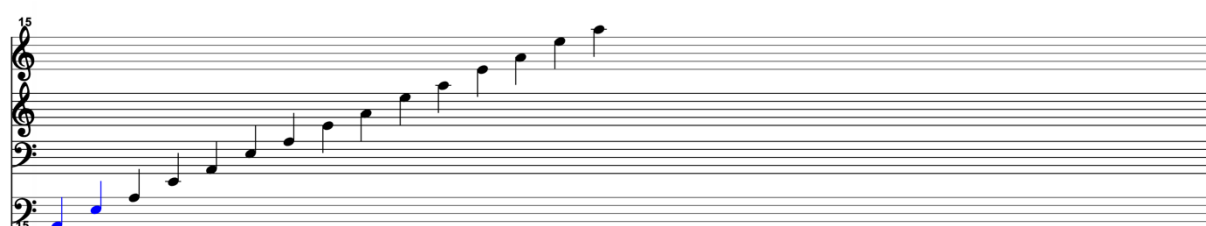
Arp 3/3 (8 sons in a row)



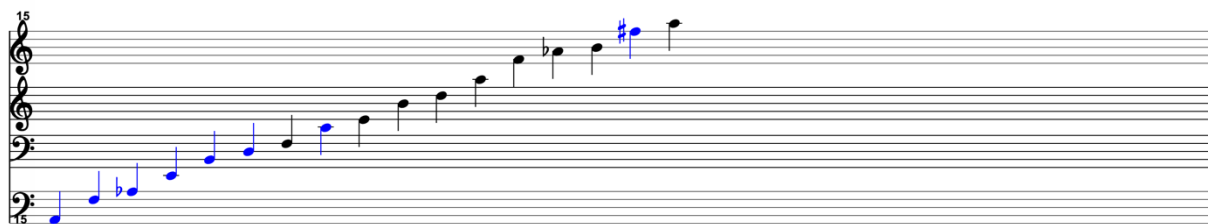
Arp 3/4 (8 sons)



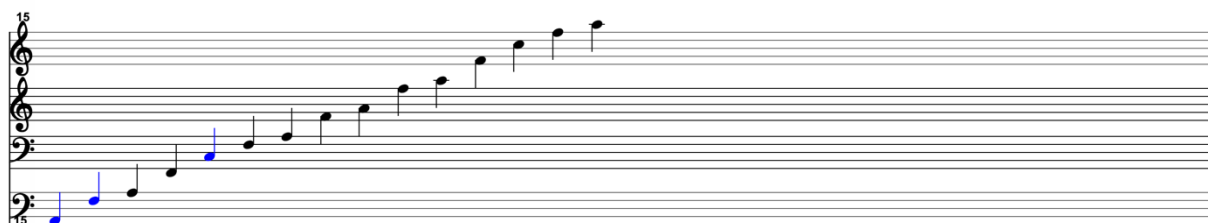
Arp 4/4 (2 sons, 5J4J)



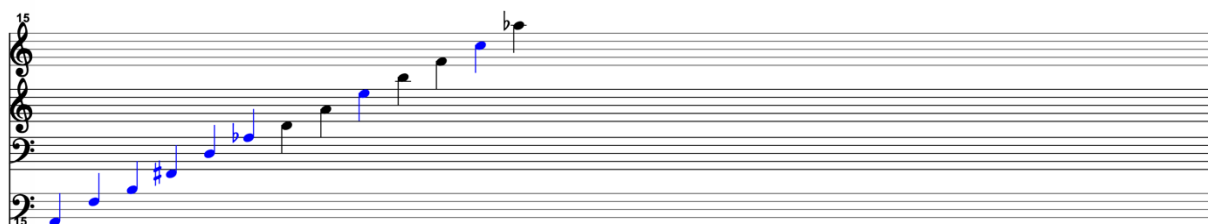
Arp 2/5 (8 sons)



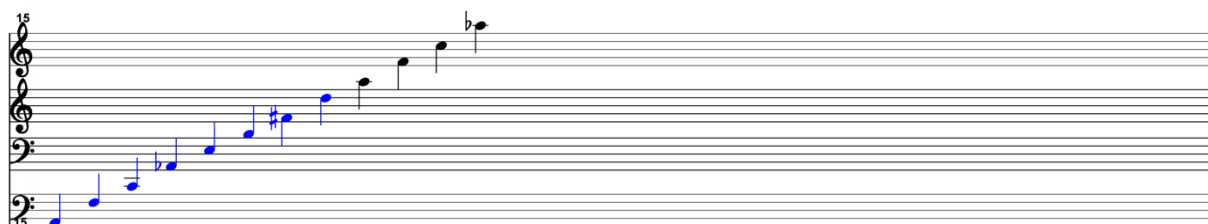
Arp 3/5 (3 sons, 6m3M6m5J4J3M)



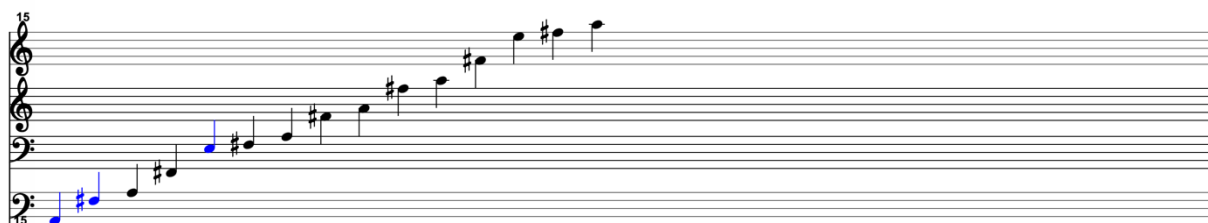
Arp 4/5 (8 sons)



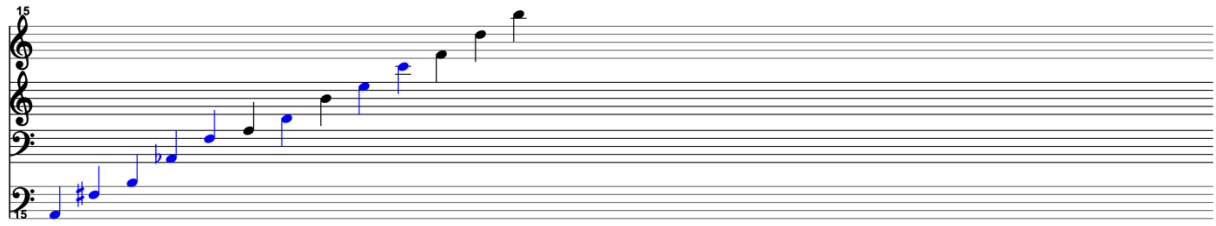
Arp 5/5 (8 sons in a row)



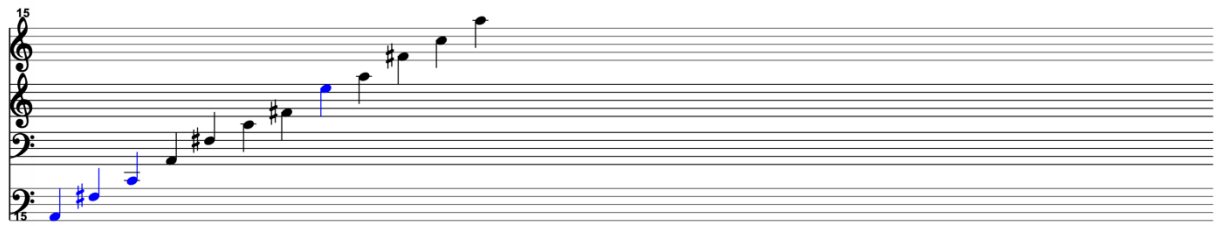
Arp 2/6 (3 sons, 6M3m6M7m2M3m6M3m)



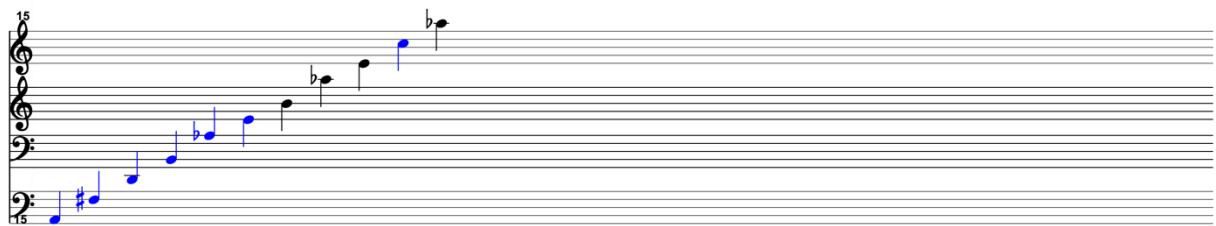
Arp 3/6 (8 sons)



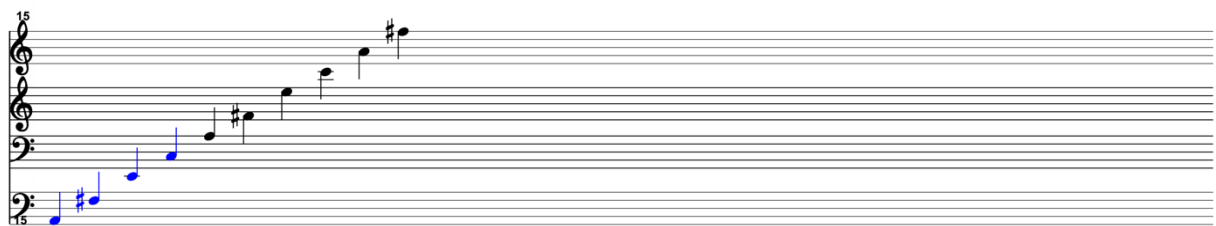
Arp 4/6 (4 sons, 6M4+6M6M4+7m4J)



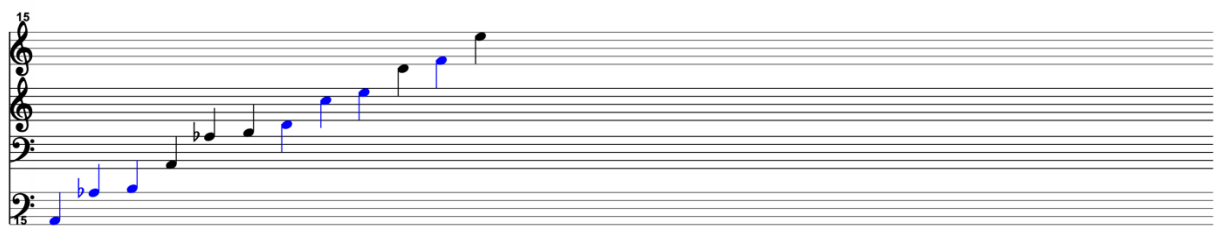
Arp 5/6 (7 sons = 6 in a row + 1)



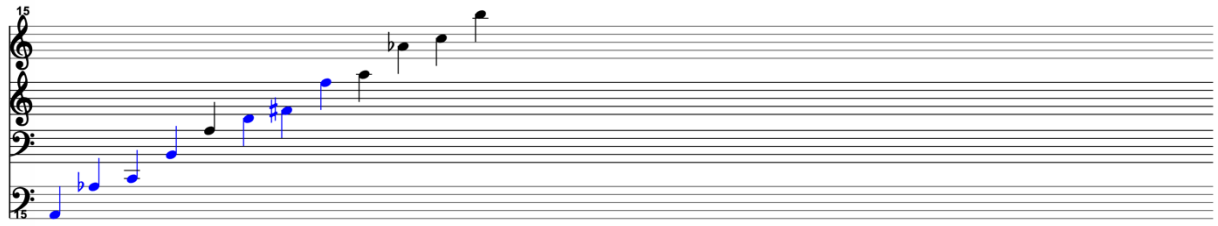
Arp 6/6 (4 sons = 6M7m6m6M)



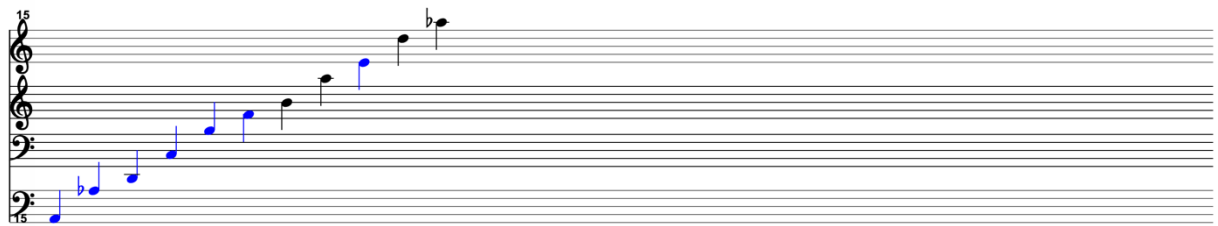
Arp 2/7 (7 sons)



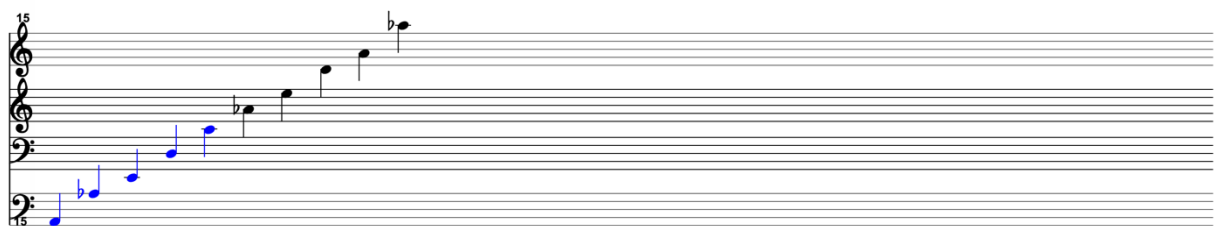
Arp 3/7 (7 sons)



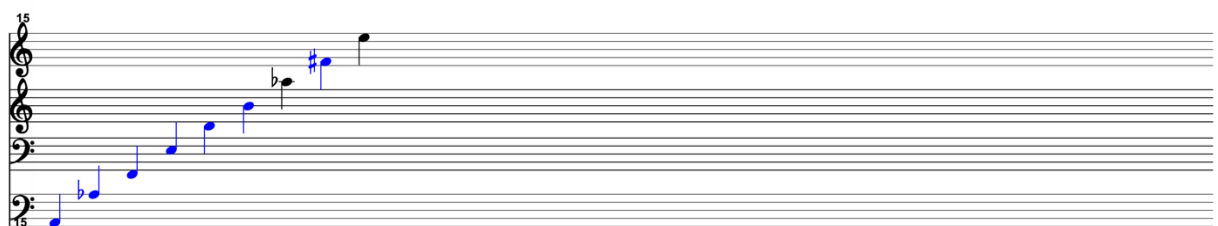
Arp 4/7 (7 sons)



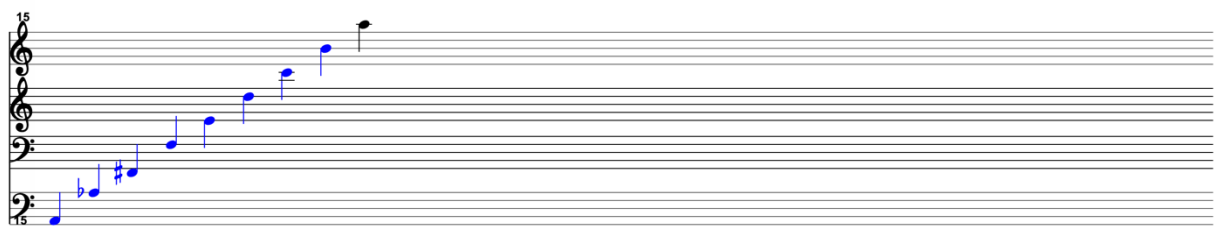
Arp 5/7 (5 sons in a row)



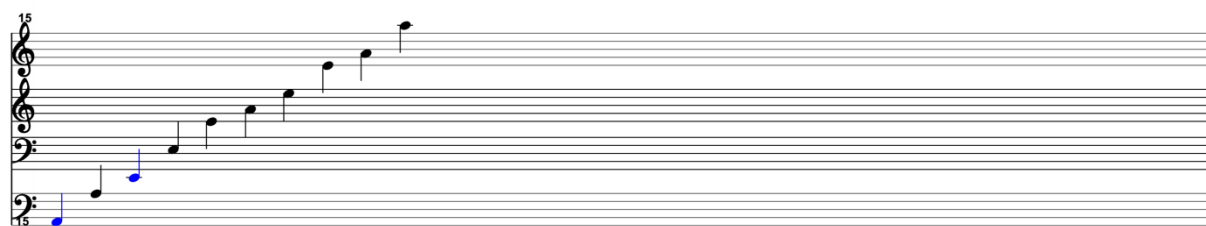
Arp 6/7 (7 sons)



Arp 7/7 (8 sons in a row)



Arp 4/8 (2 sons, 8J5J8J8J4J5J8J4J8J)



Arp 8/8 (octaves)

Modéchelle 11b

-u-uu--u

(8J / 8 sons / octaviant / 7 permutations / 11 transpositions)



Arp 1/2 (8 sons)



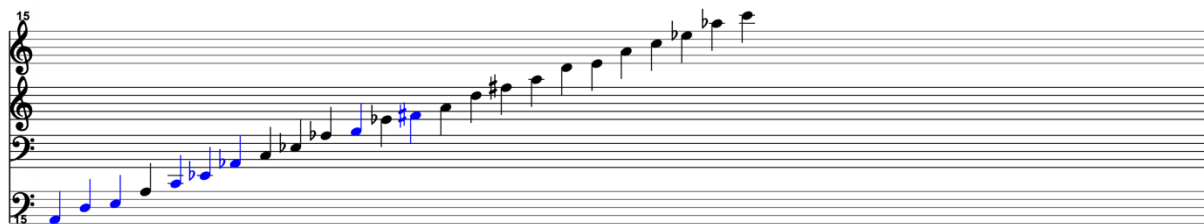
Arp 2/2 (4 sons = 7ème diminuée)



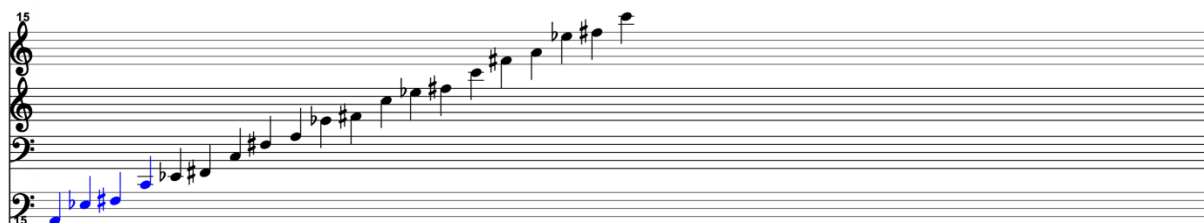
Arp 1/3 (5 sons)



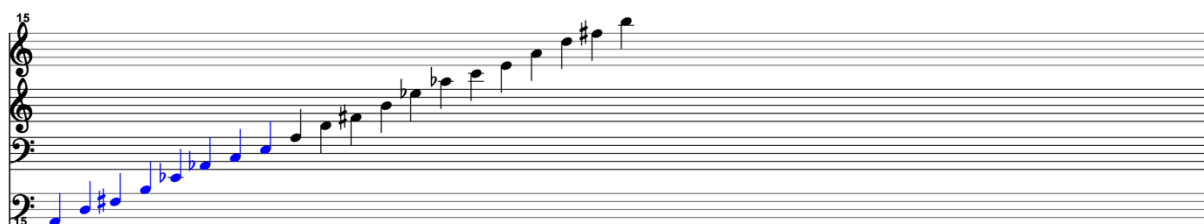
Arp 2/3 (8 sons)



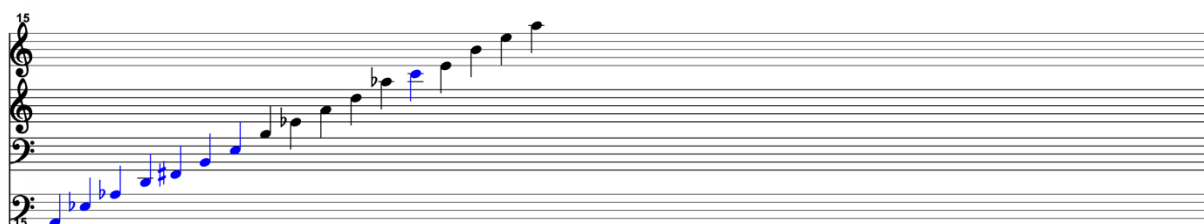
Arp 2/4 (4 sons ± 7ème diminuée)



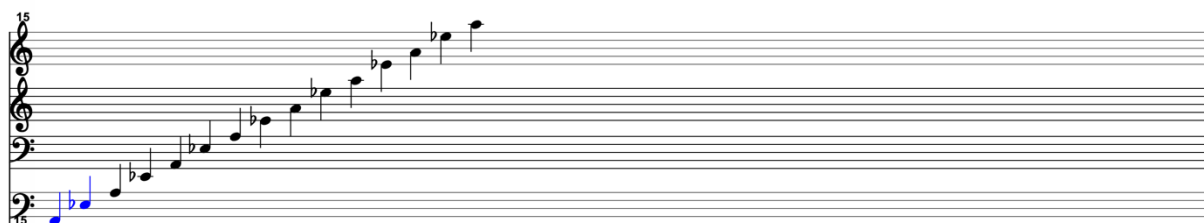
Arp 3/3 (8 sons in a row)



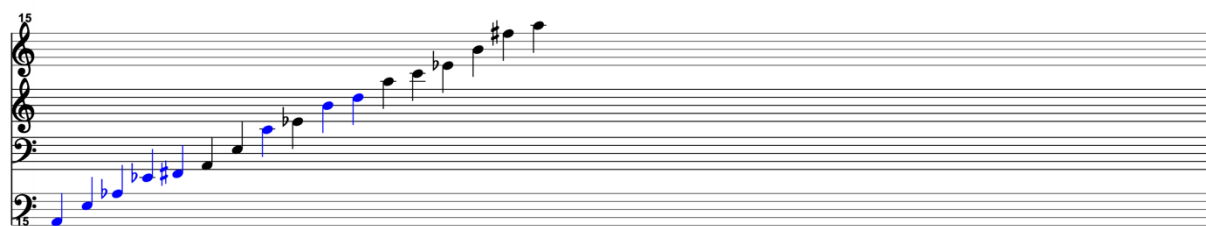
Arp 3/4 (8 sons = 7 in a row + 1)



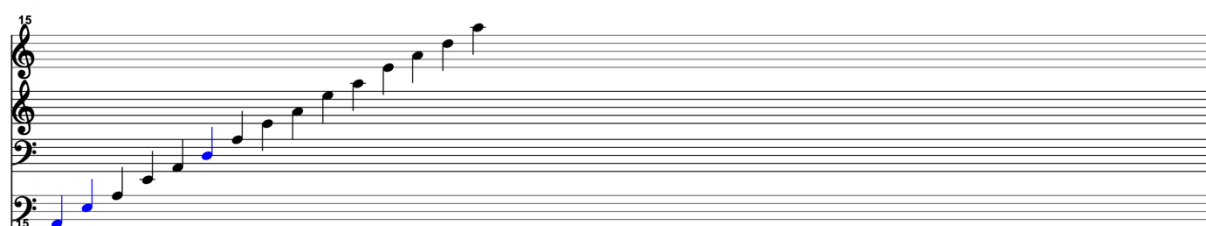
Arp 4/4 (2 sons, 4+)



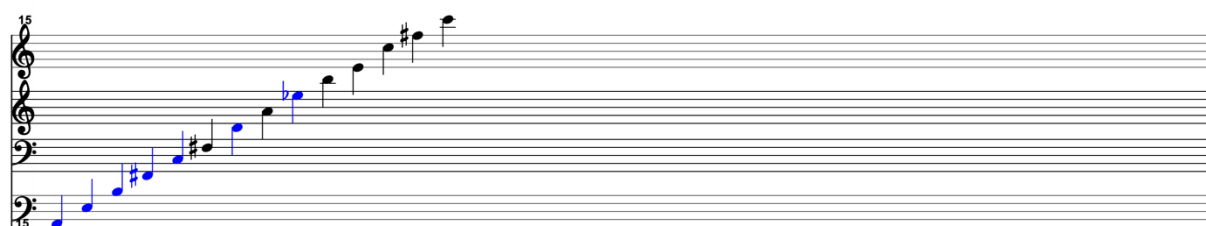
Arp 2/5 (8 sons)



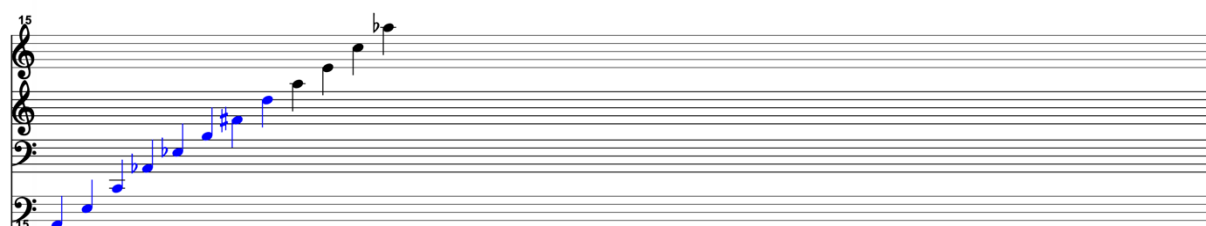
Arp 3/5 (3 sons = 5J4J5J4J4J5J4J5J4J5J)



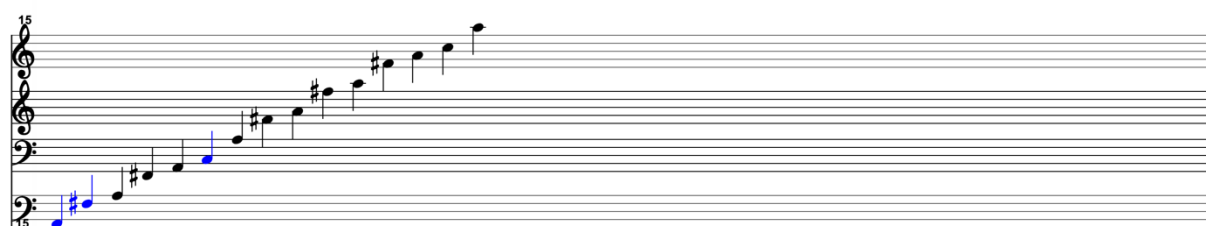
Arp 4/5 (7 sons)



Arp 5/5 (8 sons in a row)



Arp 2/6 (3 sons = 6M3m6M3m3m6M6M3m)



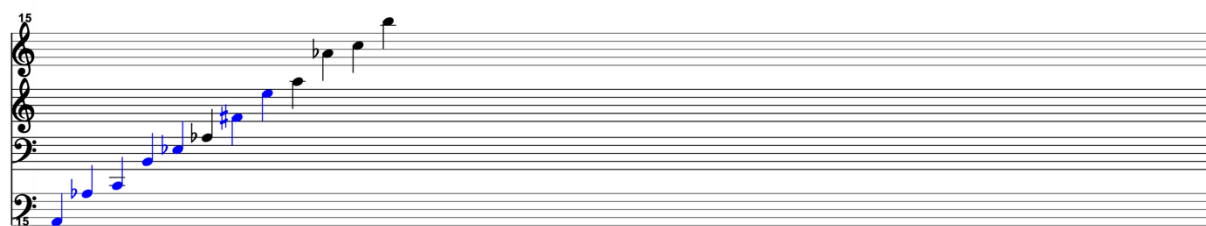
[illegible]

A musical score for the song 'The Rose Tree'. The score is written for two voices, Soprano and Alto, and a Piano accompaniment. The Soprano part is in treble clef, the Alto part is in alto clef, and the Piano part is in bass clef. The key signature is one sharp (F#), and the time signature is 4/4. The Soprano part begins with a whole note G4, followed by a half note A4, and then a quarter note B4. The Alto part begins with a whole note E3, followed by a half note F3, and then a quarter note G3. The Piano part begins with a whole note C3, followed by a half note D3, and then a quarter note E3. The score continues with various musical notations, including accidentals and dynamics.

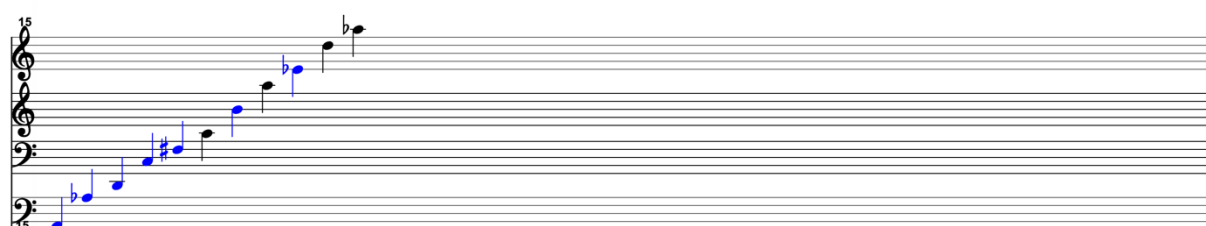
[illegible][illegible]

A musical score for the song 'The Rose Tree'. The score is written for three parts: Soprano, Alto, and Bass. The Soprano part is on a single staff with a treble clef. The Alto and Bass parts are on a grand staff (two staves) with a soprano clef for the Alto and a bass clef for the Bass. The key signature is one flat (B-flat), and the time signature is 4/4. The music is in common time. The Soprano part starts with a whole note G4, followed by a half note A4, and then a quarter note B4. The Alto part starts with a whole note E4, followed by a half note F4, and then a quarter note G4. The Bass part starts with a whole note C3, followed by a half note D3, and then a quarter note E3. The music continues with various intervals and rests, ending with a final chord of G4, E4, and C3.

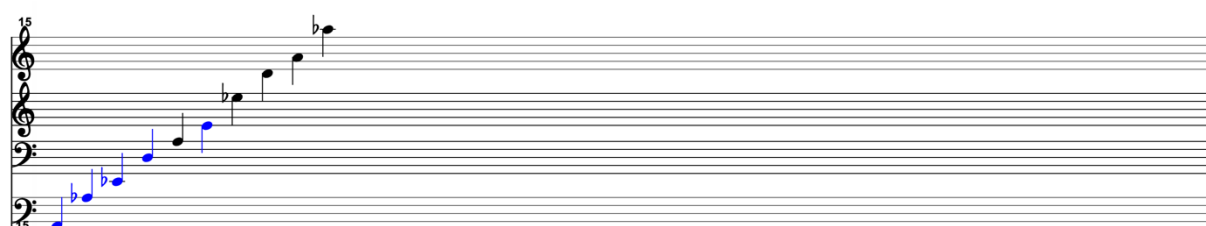
Arp 3/7 (7 sons)



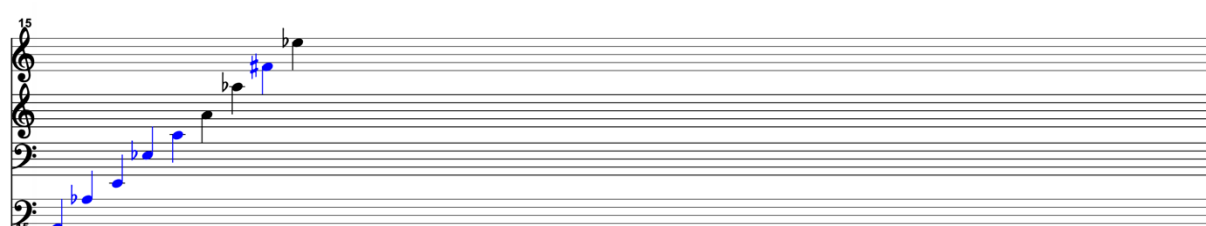
Arp 4/7 (7 sons)



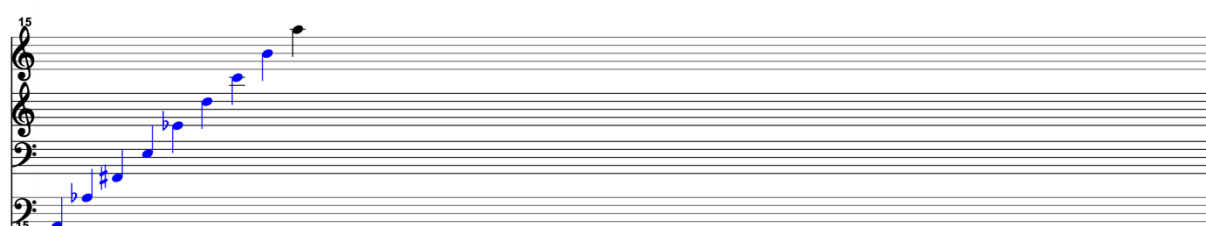
Arp 5/7 (5 sons)



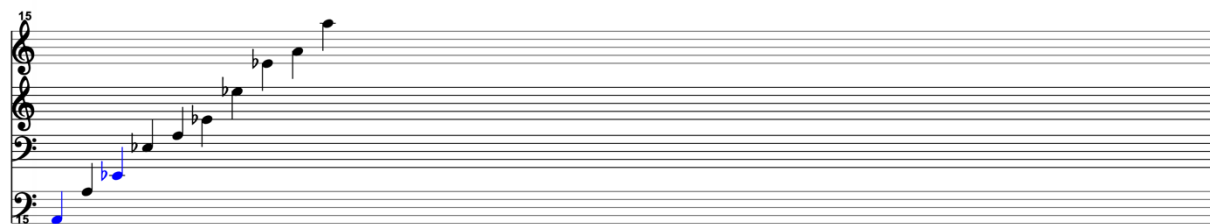
Arp 6/7 (6 sons)



Arp 7/7 (8 sons)



Arp 4/8 (2 sons = 8J4+8J4+4+8J8J4+8J)



Arp 8/8 (octaves)

Modéchelle 11c

--u-uu-u

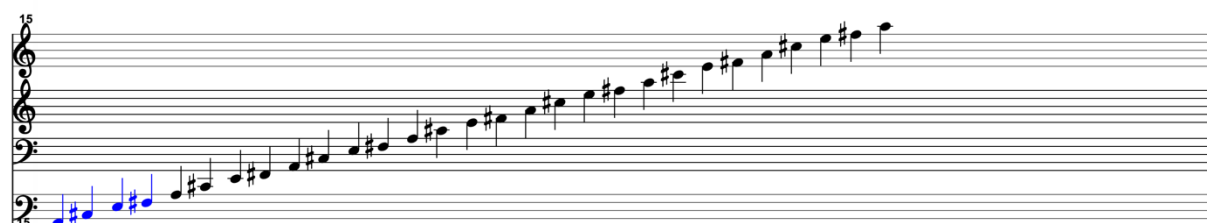
(8J / 8 sons / octaviant / 7 permutations / 11 transpositions)



Arp 1/2 (8 sons)



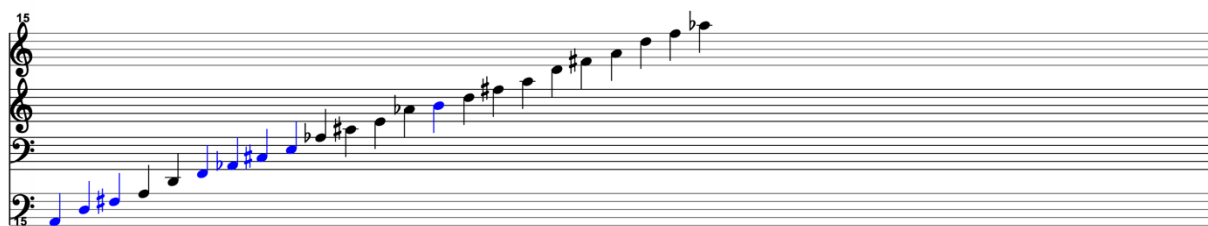
Arp 2/2 (4 sons = 3M3m2M3m)



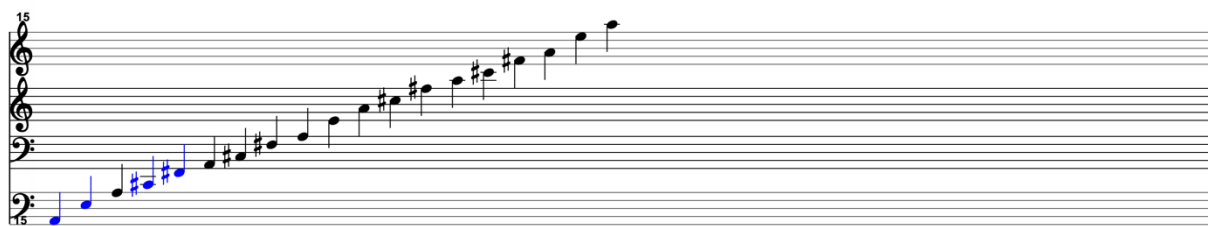
Arp 1/3 (6 sons)



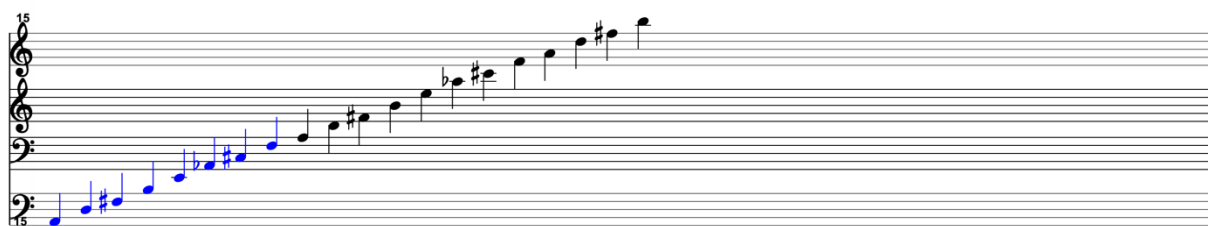
Arp 2/3 (8 sons)



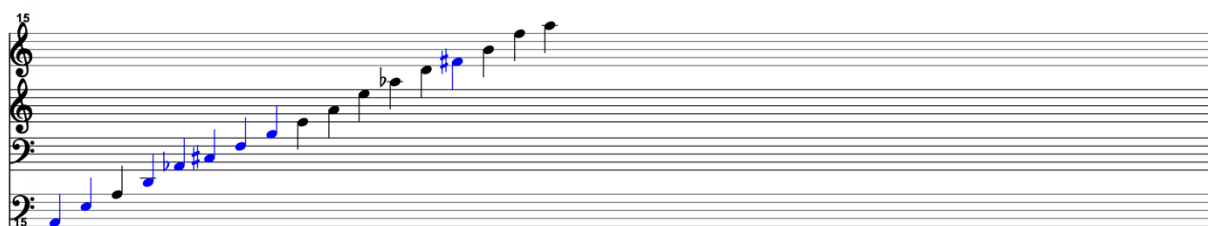
Arp 2/4 (4 sons = 5J4J3M4J3m3M4J3m)



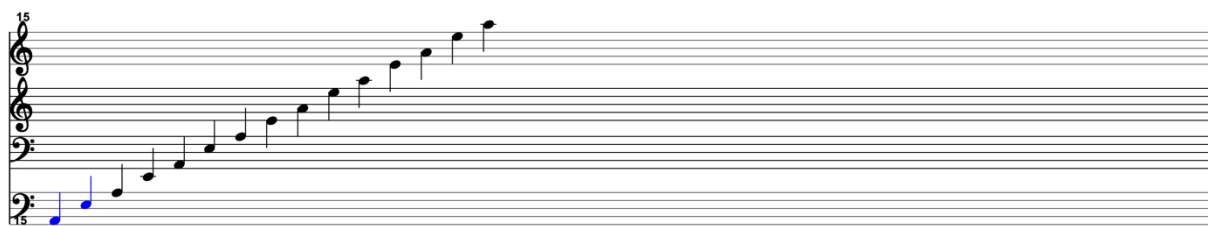
Arp 3/3 (8 sons in a row)



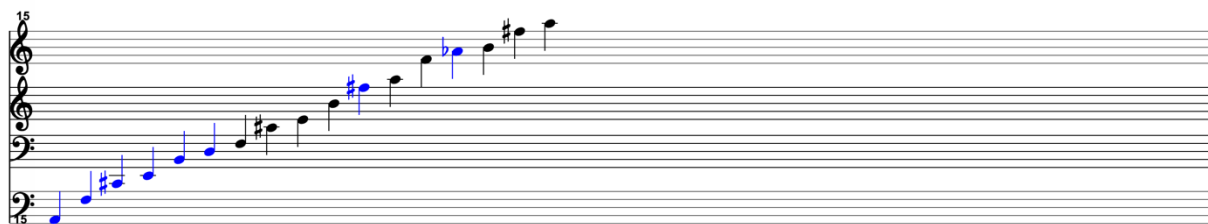
Arp 3/4 (8 sons)



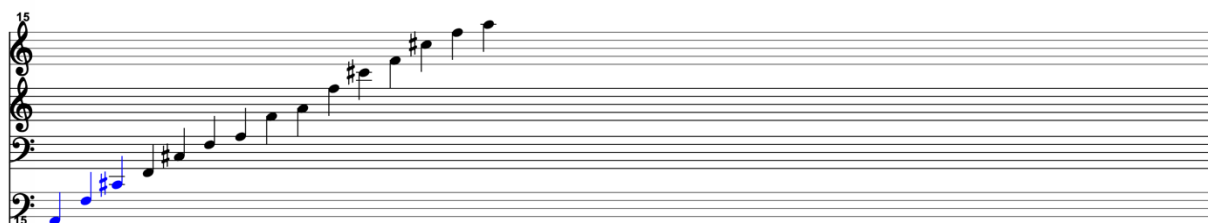
Arp 4/4 (2 sons = 5J4J)



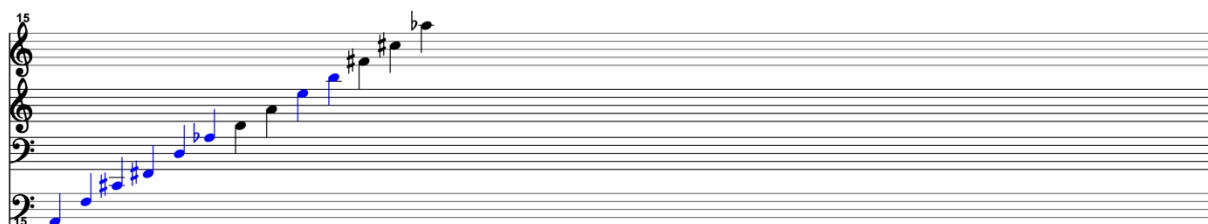
Arp 2/5 (8 sons)



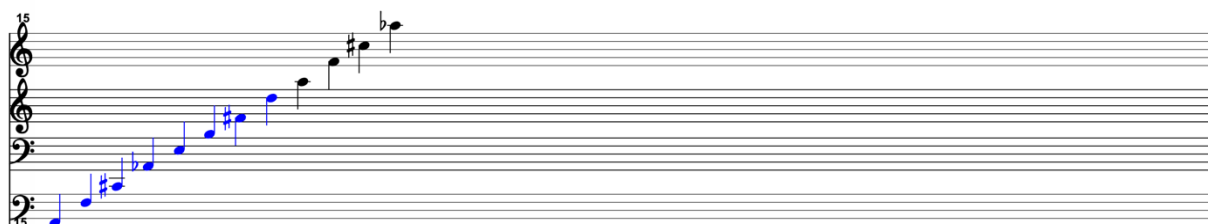
Arp 3/5 (3 sons = 6m6m3M6m3M3M6m3M)



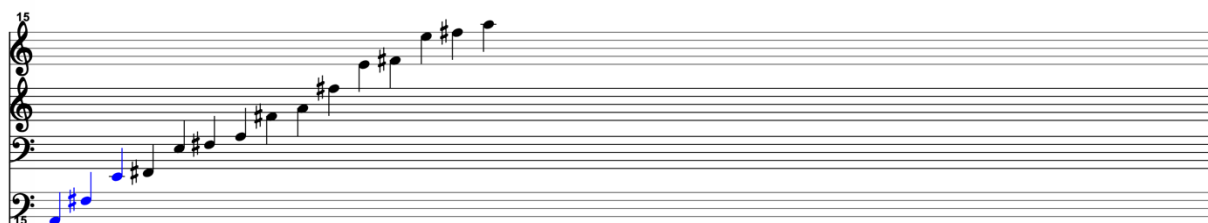
Arp 4/5 (8 sons)



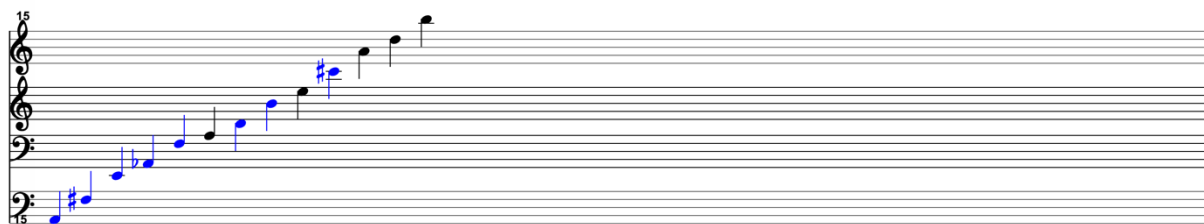
Arp 5/5 (8 sons in a row)



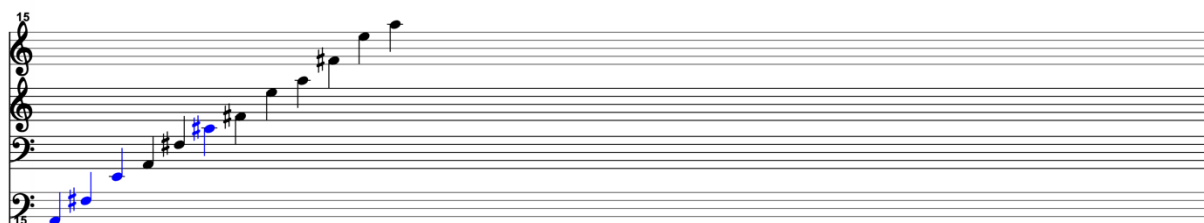
Arp 2/6 (3 sons = 6M7M2M7M2M3m6M3m)



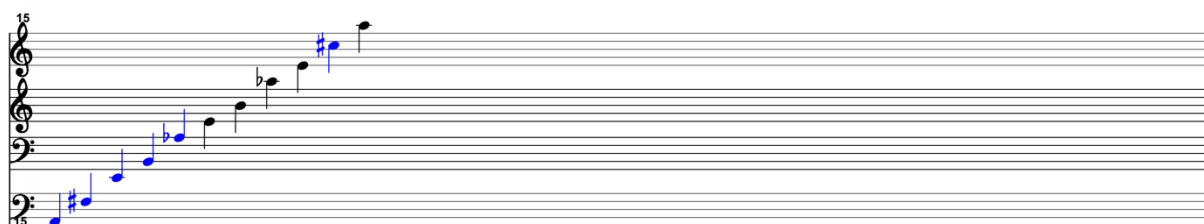
Arp 3/6 (8 sons)



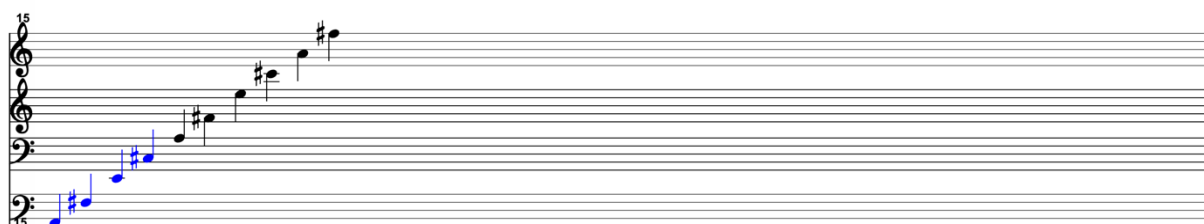
Arp 4/6 (4 sons = 6M7m4J6M5J4J7m4J)



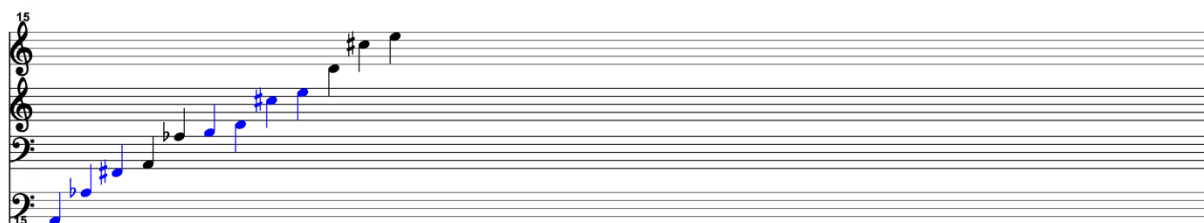
Arp 5/6 (6 sons)



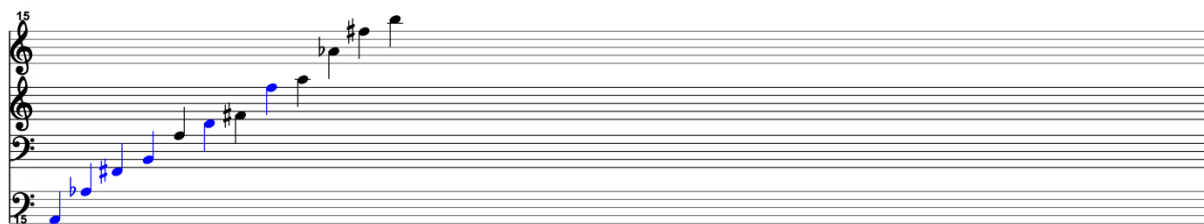
Arp 6/6 (4 sons = 6M7m6M6m)



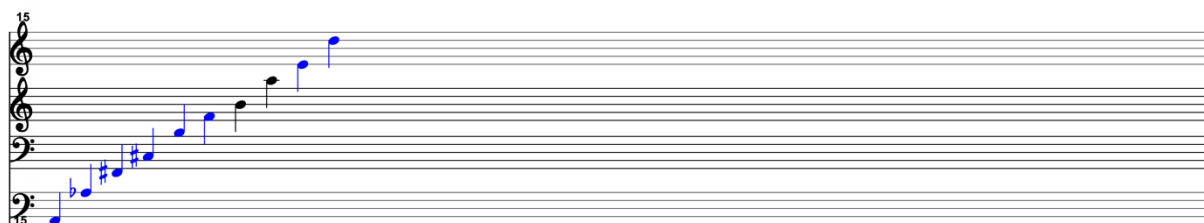
Arp 2/7 (7 sons)



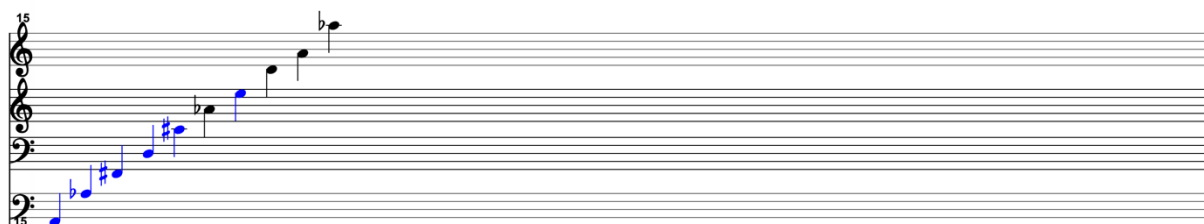
Arp 3/7 (6 sons)



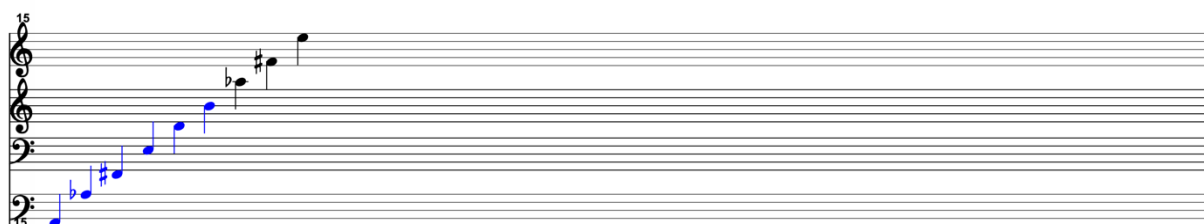
Arp 4/7 (8 sons)



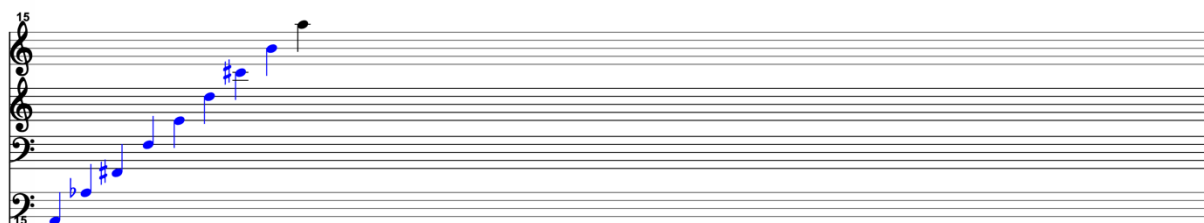
Arp 5/7 (6 sons)



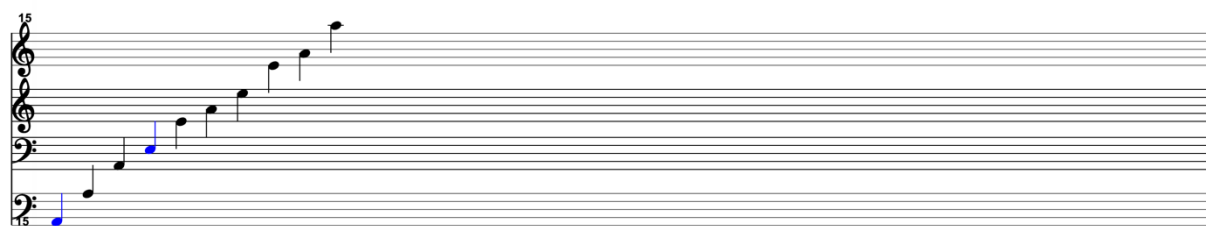
Arp 6/7 (6 sons in a row)



Arp 7/7 (8 sons in a row)



Arp 4/8 (2 sons = 8J8J5J8J4J5J8J4J8J)



Arp 8/8 (octaves)

Tableau d'analyse d'un certain nombre d'accords ou arpèges itératifs

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
2m 2m (mais pas plus de 2 demis-tons dans les modes de facteur ≤ 2)	3			X		X	X		X	X	X	X	X		X	X	X	X
2M 2M (gamme par tons)	3	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X
2M 2M 2M	4	X		X		X	X		X	X	X	X	X			X	X	X
2M 2M 2M 2M	5	X		X		X			X	X	X		X		X	X	X	
2M 2M 2M 2M 2M	6	X		X		X					X		X		X			
2M 2M 2M 2M 2M 2M ∞	6	X		X		X					X							
2m 2M (mode 2)	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2m 2M 2m 2M	5		X				X	X		X		X		X	X	X	X	X
2m 2M 2m 2M 2m 2M	7		X									X		X		X		
2m 2M 2m 2M 2m 2M 2m 2M ∞	8		X															
2m 2m 2M (mode 3)	4			X		X	X		X	X	X	X	X		X	X	X	X
2m 2m 2M 2m 2m 2M	7			X							X				X			
2m 2m 2M 2m 2m 2M 2m 2M ∞	9			X														
2m 2M 2M (mode 4)	4			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2m 2M 2M 2m 2M 2M	7				X				X				X					X
2m 2M 2M 2m 2M 2M 2m 2M 2M	8				X													
2m 2M 2M 2m 2M 2M 2m 2M 2M 2M 2M	9				X													
2m 2M 2M 2m 2M 2M 2m 2M 2M 2M 2M 2M 2M 2M	10				X													
2m 2M 2M 2m 2M 2M 2m 2M 2M 2M 2M 2M 2M 2M 2M 2M	11				X													
2m 2M 2M 2m 2M 2M 2m 2M 2M 2M 2M 2M 2M 2M 2M 2M à [2m 2M 2M] x 12 ∞	12				X													
2m 3m	3		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
2m 3m 2m 3m	5		X	X			X				X	X			X	X		X
2m 3m 2m 3m 2m 3m	6			X			X								X			
2m 3m 2m 3m 2m 3m 2m 3m	6			X											X			
2m 3m 2m 3m 2m 3m 2m 3m 2m 3m ∞	6			X														
2m 3M	3			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2m 3M 2m 3M	5			X	X				X	X	X		X			X		X
2m 3M 2m 3M 2m 3M 2m 3M 2m 3M 2m 3M 2m 3M 2m 3M ∞	7 à 12				X						X							
2M 3m	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2M 3m 2M 3m	5				X		X	X		X		X	X	X	X	X	X	X
2M 3m 2M 3m 2M 3m	6				X			X				X						X
2M 3m 2M 3m 2M 3m 2M 3m	7				X							X						X
2M 3m 2M 3m 2M 3m 2M 3m 2M 3m 2M 3m 2M 3m 2M 3m ∞	8 à 12				X							X						
2M 3M	3	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
2M 3M 2M 3M	4	X	X	X		X			X		X	X			X	X	X	
2M 3M 2M 3M 2M 3M ∞	4	X	X	X		X					X					X	X	
2m 2m 3m	4			X			X			X	X	X			X	X		X
2m 2m 3m 2m 2m 3m	7			X			X			X	X	X			X	X		X
2m 2m 3m 2m 2m 3m 2m 2m 3m	9			X			X			X	X	X			X	X		X
2m 2m 3m 2m 2m 3m 2m 2m 3m 2m 2m 3m	11			X			X			X	X	X			X	X		X
2m 2m 3m 2m 2m 3m 2m 2m 3m 2m 2m 3m à [2m 2m 3m] x 12 ∞	12			X			X			X	X	X			X	X		X

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
2m 2M 3m	4		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
2m 2M 3m 2m 2M 3m ∞	6		X			X				X			X	X		X		
2m 2M 3M	4		X	X		X	X		X	X	X	X	X	X	X	X	X	X
2m 2M 3M 2m 2M 3M	7						X					X			X			
2m 2M 3M 2m 2M 3M 2m 2M 3M	10						X					X			X			
2m 2M 3M 2m 2M 3M 2m 2M 3M 2m 2M 3M 2m 2M 3M à [2m 2M 3M] x 12 ∞	10						X											
2m 3m 3m	4		X	X		X	X		X	X	X	X	X	X	X	X	X	X
2m 3m 3m 2m 3m 3m	7						X				X	X			X			
2m 3m 3m 2m 3m 3m 2m 3m 3m	10						X					X			X			
2m 3m 3m 2m 3m 3m 2m 3m 3m 2m 3m 3m	11						X					X			X			
2m 3m 3m 2m 3m 3m 2m 3m 3m 2m 3m 3m 2m 3m 3m à [2m 3m 3m] x 12 ∞	12						X											
2m 3m 3M	4			X		X	X	X		X	X	X		X	X	X	X	X
2m 3m 3M 2m 3m 3M	5			X			X	X							X			X
2m 3m 3M 2m 3m 3M 2m 3m 3M	6			X				X							X			
2m 3m 3M 2m 3m 3M 2m 3m 3M 2m 3m 3M	6			X				X										
2m 3M 3M	4			X		X	X	X	X	X	X		X	X	X	X	X	X
[2m 3M 3M] x 2	7			X					X	X								
[2m 3M 3M] x 3	10								X	X								
[2m 3M 3M] x 4 puis octaviant	12								X	X								
2M 2m 3m	4		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
2M 2m 3m 2M 2m 3m			X			X			X		X						X	
2M 2m 3m 2M 2m 3m 2M 2m 3m à [2M 2m 3m] x 12 ∞			X			X											X	
2M 2m 3M	4			X	X		X	X	X	X	X	X	X	X	X	X	X	X
2M 2m 3M 2M 2m 3M							X					X			X	X		X
2M 2m 3M 2M 2m 3M 2M 2m 3M							X								X			
2M 2m 3M 2M 2m 3M 2M 2m 3M 2M 2m 3M à [2M 2m 3M] x 12 ∞							X											
2M 2M 3m	4			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2M 2M 3m 2M 2M 3m							X		X	X					X			X
2M 2M 3m 2M 2M 3m 2M 2M 3m							X											X
2M 2M 3m 2M 2M 3m 2M 2M 3m 2M 2M 3m à [2M 2M 3m] x 12 ∞							X											
2M 2M 3M	4	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
2M 2M 3M 2M 2M 3M		X		X		X		X			X					X	X	
2M 2M 3M 2M 2M 3M 2M 2M 3M à [2M 2M 3M] x 12 ∞		X		X		X		X			X							
2M 3m 3m	4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2M 3m 3m 2M 3m 3m				X				X				X	X	X		X		
2M 3m 3m 2M 3m 3m 2M 3m 3m				X				X						X				
2M 3m 3m 2M 3m 3m 2M 3m 3m 2M 3m 3m				X				X						X				
[2M 3m 3M] x 9 à 12								X										
2M 3m 3M	4		X	X	X		X		X	X	X	X	X	X	X	X	X	X
2M 3m 3M 2M 3m 3M			X				X		X	X			X		X	X	X	
2M 3m 3M 2M 3m 3M 2M 3m 3M à [2M 3m 3M] x 9			X						X	X								
[2M 3m 3M] x 10 à 12									X	X								

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
2M 3M 3M	4	X		X		X	X	X	X		X	X	X	X	X	X	X	X
2M 3M 3M 2M 3M 3M		X		X		X	X				X	X						
2M 3M 3M 2M 3M 3M 2M 3M 3M		X		X		X					X	X						
[2M 3M 3M] x 9 à 12				X		X					X	X						
2M 3M 3m	4		X	X		X	X		X	X	X	X	X	X	X	X	X	X
2M 3M 3m 2M 3M 3m			X						X	X					X		X	X
2M 3M 3m 2M 3M 3m 2M 3M 3m			X						X	X							X	
[2M 3M 3m] x 4 à 12			X						X	X								
3m 3m	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3m	4		X			X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3m 3m	4		X			X	X	X	X	X	X	X	X	X		X	X	X
3m 3m 3m 3m 3m 3m	4		X			X			X	X		X		X		X	X	X
3m 3m 3m 3m 3m 3m 3m ∞	4		X			X			X	X						X	X	X
3m 3M	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3M 3m 3M	5			X			X		X	X	X	X		X	X	X		X
3m 3M 3m 3M 3m 3M	7						X				X	X			X			X
3m 3M 3m 3M 3m 3M 3m 3M 3m 3M	9						X					X			X			
3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M	10						X								X			
3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M	11						X											
3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M	12						X											
3M 3M	3	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
3M 3M 3M	3	X		X		X	X	X	X	X	X	X		X	X	X	X	X
3M 3M 3M 3M 3M 3M 3M	3	X		X		X		X			X				X	X	X	X
3M 3M 3M 3M 3M 3M 3M 3M ∞	3	X		X		X		X								X	X	X
3m 3m 3M	4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3M 3m 3m 3M	7				X		X				X	X			X	X	X	
3m 3m 3M 3m 3m 3M 3m 3m 3M	9				X		X				X	X						
3m 3m 3M 3m 3m 3M 3m 3m 3M 3m 3m 3M 3m 3M ∞	10 / 11				X						X	X						
3m 3M 3M (aussi bien que 3M 3M 3m)	4			X		X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3M 3M 3m 3M 3M	7			X			X						X	X	X			
3m 3M 3M 3m 3M 3M 3m 3M 3M	8						X						X	X	X			
3m 3M 3M 3m 3M 3M 3m 3M 3M 3m 3M 3M	12												X	X	X			
[3m 3M 3M] x 5 à [3m 3M 3M] x 8	12												X	X	X			
3m 3m 3m 3M	5		X			X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3m 3M 3m 3m 3M	9										X	X						
3m 3m 3m 3M 3m 3m 3M 3m 3m 3M	12											X						
[3m 3m 3m 3M] x 4 mais plus = chromatique	12											X						
3m 3m 3M 3M	5			X		X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3M 3M 3m 3m 3M 3M	8						X				X	X			X			
3m 3m 3M 3M 3m 3m 3M 3M 3m 3M 3M 3M ∞	9 / 10 / 12						X											
3m 3M 3M 3M	4			X		X	X	X	X	X	X	X		X	X	X	X	X
3m 3M 3M 3M 3m 3M 3M 3M	7			X											X			
[3m 3M 3M 3M] x 3 à x 5	10 / 12														X			

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
3m 3m 3m 3M 3M	6					X	X	X	X	X	X	X	X	X	X	X	X	X
3m 3m 3m 3M 3M 3m 3m 3m 3M 3M	10						X					X						
3m 3m 3m 3M 3M 3m 3m 3m 3M 3M 3m 3m 3m 3M 3M	12											X						
3m 3M 3m 3m 3M (= 3M 3m 3M 3m 3m)	6				X		X				X	X			X	X	X	X
3m 3M 3m 3m 3M 3m 3M 3m 3M	8						X				X	X						
3m 3M 3m 3m 3M 3m 3M 3m 3M 3m 3M 3m 3M	9						X				X	X						
[3m 3M 3m 3m 3M] x 4	9											X						
[3m 3M 3m 3m 3M] x 5	11											X						
3m 3M 3m 3M 3M	6			X			X		X	X	X	X		X	X	X		X
3m 3M 3m 3M 3M 3m 3M 3m 3M 3M	10						X		X	X					X			
[3m 3M 3m 3M 3M 3m 3m 3M 3M 3M] x 2 = [3m 3M 3m 3M 3M] x 4	10								X	X					X			
[3m 3M 3m 3M 3M] x 5	10									X								
3m 3m 3M 3M 3M	5			X		X	X	X	X	X	X	X			X	X	X	X
3m 3m 3M 3M 3M 3m 3m 3M 3M 3M	8					X	X		X	X					X			
3m 3m 3M 3M 3M 3m 3m 3M 3M 3M 3M 3M 3M	8					X			X	X					X			
[3m 3m 3M 3M 3M] x 4	8					X			X	X					X			
[3m 3m 3M 3M 3M] x 5	8					X			X	X								
3m 3m 3m 3M 3m 3M	7						X			X	X	X		X	X	X		X
3m 3m 3m 3M 3m 3M 3m 3m 3m 3M 3m 3M	10										X	X						
[3m 3m 3m 3M 3m 3M] x 3 et 4	12										X	X						
3m 3m 3M 3M 3m 3M	7						X		X			X	X	X	X		X	X
3m 3m 3M 3M 3m 3M 3m 3m 3M 3M 3m 3M	9						X								X			
3m 3m 3M 3M 3m 3M 3m 3m 3M 3M 3m 3M 3m 3M	11						X											
[3m 3m 3M 3M 3m 3M] x 4	12						X											
3m 4J	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3m 4J 3m 4J	5			X	X			X		X		X	X	X	X		X	X
3m 4J 3m 4J 3m 4J	6			X				X					X	X				
[3m 4J] x 4 et x 5	6			X				X						X				
[3m 4J] x 6 à 11	6			X				X										
3M 4J	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3M 4J 3M 4J	5		X	X			X		X	X	X		X		X	X	X	X
3M 4J 3M 4J 3M 4J	7		X						X	X			X		X	X		

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
3m 3M 4J (arpège mineur, octaviant)	3		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
[3m 3M 4J] x 2	3		X	X		X	X			X						X	X	X
[3m 3M 4J] x 3 À x 7	3		X	X		X										X	X	X
[3m 3M 4J] x 8 (puis NUL)	3															X	X	X
3m 4J 3M (1er renversement de l'arpège Majeur, octaviant)	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[3m 4J 3M] x 2	3		X	X		X			X							X	X	X
[3m 4J 3M] x 3 à x 7	3		X	X		X										X	X	X
[3m 4J 3M] x 8 (puis NUL)	3															X		
4J 3M 3m (2ème renversement de l'arpège Majeur, octaviant)	3		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
[4J 3M 3m] x 2	3		X	X		X	X		X							X	X	X
[4J 3M 3m] x 3 à x 7	3		X	X		X										X	X	X
[4J 3M 3m] x 8 puis NUL	3															X	X	X
4J 4J	3			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[4J 4J] x 2	5				X			X			X	X	X			X	X	X
[4J 4J] x 3	7				X						X	X						X
[4J 4J] x 4 à x 9 puis hors tessiture	9 à 12				X						X	X						
4J 4+	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[4J 4+] x 2	5					X	X	X	X	X	X		X	X	X		X	
[4J 4+] x 3	7							X					X	X	X			
[4J 4+] x 4	9												X	X	X			
[4J 4+] x 5	11												X	X	X			
[4J 4+] x 6 à x 8 pui hors tessiture	12												X	X	X			
4+ 4J	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[4+ 4J] x 2	5					X	X	X	X	X	X		X	X	X	X		
[4+ 4J] x 3	7							X					X	X	X			
[4+ 4J] x 4	9												X	X	X			
[4+ 4J] x 5	11												X	X	X			
[4+ 4J] x 6 = 4+ 4J 4+ 4J 4+ 4J 4+ 4J 4+ 4J 4+ 4J et jusqu'à [4+ 4J] x 8	12												X	X	X			
4+ 4J 4J	4			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4+ 4J 4J 4+ 4J 4J	7			X				X			X	X	X	X				
4+ 4J 4J 4+ 4J 4J 4+ 4J 4J	9			X				X					X					
4+ 4J 4J 4+ 4J 4J 4+ 4J 4J 4+ 4J 4J 4J 4J	9			X				X										
4+ 4J 4J 4+ 4J 4J 4+ 4J 4J 4+ 4J 4J 4+ 4J 4J 4+ 4J (hors tessiture)	9							X										
4J 4+ 4+	3		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
[4J 4+ 4+] x 2	5					X						X	X	X	X		X	
[4J 4+ 4+] x 3 puis NUL	7												X					
4+ 4+ 4J	3		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
[4J 4+ 4+] x 2	5					X						X	X	X	X	X		
[4J 4+ 4+] x 3 puis NUL	7												X					
4+ 4J 4J 4+ 4J	6			X				X	X	X	X		X	X	X			
4+ 4J 4J 4+ 4J 4+ 4J 4+ 4J 4+ 4J	10							X	X	X			X	X	X			
4+ 4J 4J 4+ 4J 4+ 4J 4J 4+ 4J 4+ 4J 4J 4+ 4J	11							X	X	X			X					
4+ 4J 4J 4+ 4J 4+ 4J 4J 4+ 4J 4+ 4J 4J 4+ 4J 4+ 4J (NUL)	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MODÉCHELLES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACCORDS / ARPÈGES ITÉRATIFS	n sons	1	2	3	4	5	6	7	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
4+ 4J 4J 4+ 4J 4+ 4J	7							X	X	X			X	X	X			
4+ 4J 4J 4+ 4J 4+ 4J 4+ 4J 4J 4+ 4J 4+ 4J	11												X	X	X			
4+ 4J 4J 4+ 4J 4+ 4J 4+ 4J 4J 4+ 4J 4+ 4J 4J (puis hors tessiture)	11												X					
4+ 5J	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4+ 5J 4+ 5J	5					X	X	X		X	X	X	X		X		X	
4+ 5J 4+ 5J 4+ 5J	7										X	X	X		X			
[4+ 5J] x 4 à x 5 puis NUL	9 à 12											X						
5J 4+	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[5J 4+] x 2	5					X	X	X	X		X	X	X		X	X		
[5J 4+] x 3	7										X	X	X		X			
[5J 4+] x 4 à x 5 puis hors tessiture	9 à 11											X						
5J 4+ 4J	4		X		X	X	X	X	X	X	X	X	X	X	X	X	X	
[5J 4+ 4J] x 2	4		X			X	X		X	X			X		X	X	X	
[5J 4+ 4J] x 3	4		X			X			X	X					X	X	X	
[5J 4+ 4J] x 4	4		X			X			X	X						X	X	
[5J 4+ 4J] x 5 puis hors tessiture	4					X			X	X						X	X	
5J 5J	3			X	X	X	X		X	X	X	X	X	X	X	X	X	X
[5J 5J] x 2	5						X		X	X	X	X			X	X	X	X
[5J 5J] x 3	7						X					X			X			X
[5J 5J] x 3,5 = 5J x 7	8						X								X			
[5J 5J] x 4 à x 6 (puis hors tessiture)	9 à 12						X											
5J 5J 4+	4			X	X	X	X		X	X	X	X	X	X	X	X	X	X
[5J 5J 4+] x 2	7			X	X		X		X	X	X	X	X		X			
[5J 5J 4+] x 3	9			X	X						X	X						
[5J 5J 4+] x 4 puis NUL	9			X	X						X	X						

On pourra bien sûr développer encore ce tableau selon toutes les combinaisons imaginables entre tous les intervalles, de la seconde mineure à la 7ème Majeure, mais il nous a semblé que les éléments donnés ici sont les plus utiles dans un premier temps.

On affinera bien sûr les données cas par cas selon le contexte propre à chaque composition en utilisant le logiciel développé à l'Ircam.