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Mandala Matematica

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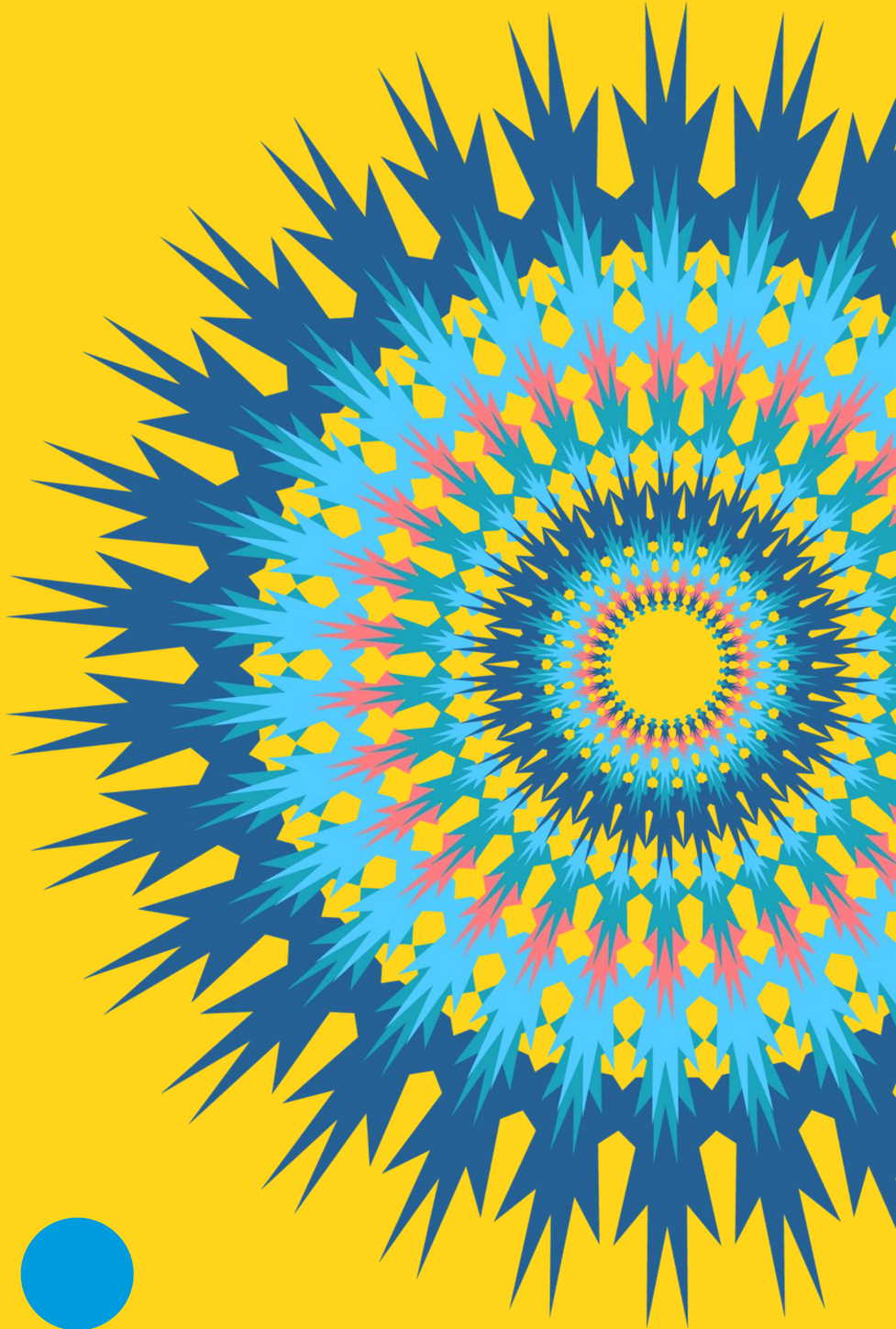
Una guida per le minoranze etniche nel settore STEAM



Co-funded by
the European Union

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Piano della lezione

Concetti di base

Teoria

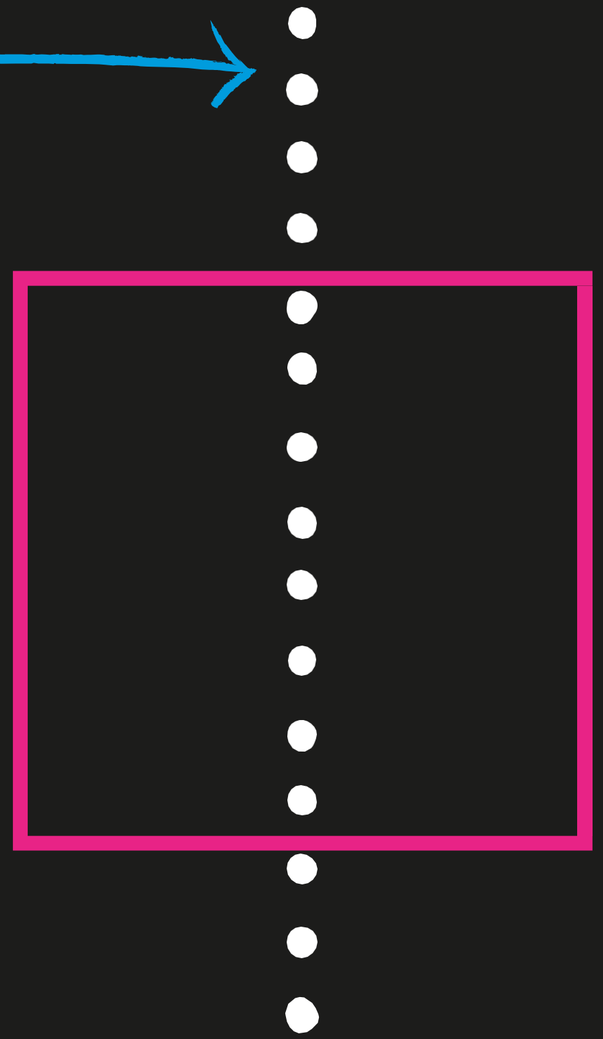
Esempi

Attività pratica

Riflessione

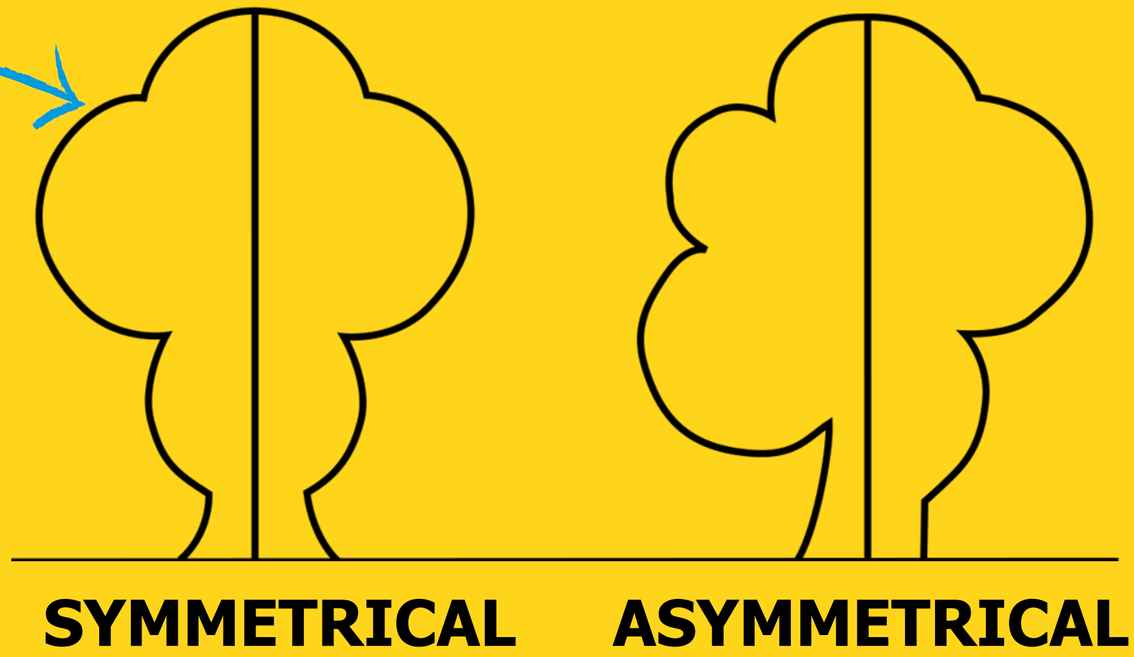
CHE COS'È LA SIMMETRIA?

Asse di simmetria

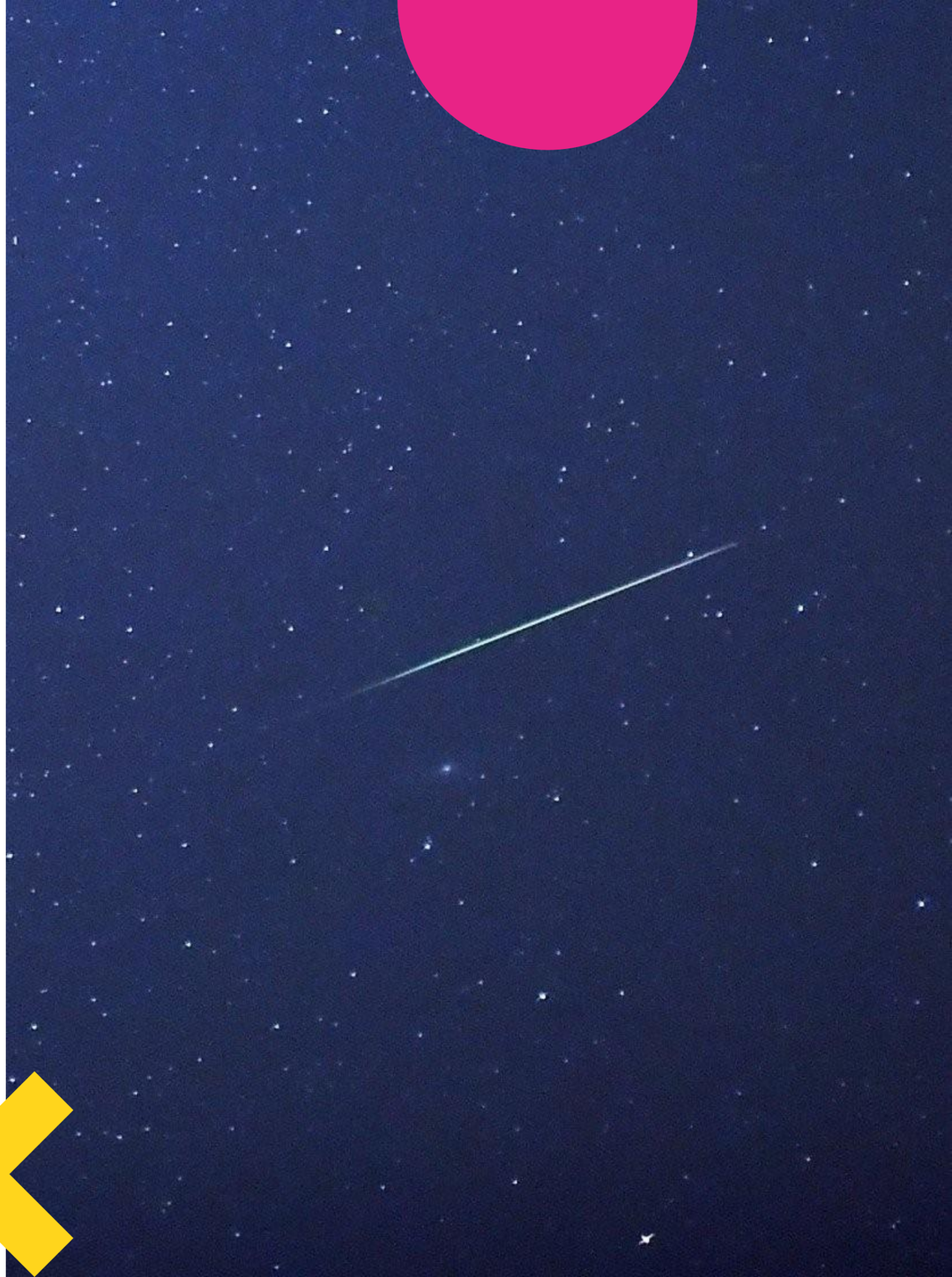


Entrambe le parti sono esattamente uguali

La simmetria (dal greco antico συμμετρία symmetria "accordo di dimensioni, proporzione, disposizione") nel linguaggio comune si riferisce a un senso di proporzione ed equilibrio armonioso e bello.



Ad esempio, Aristotele attribuisce ai corpi astronomici una forma sferica, attribuendo questa misura geometrica di simmetria formalmente definita all'ordine naturale e alla perfezione del cosmo.



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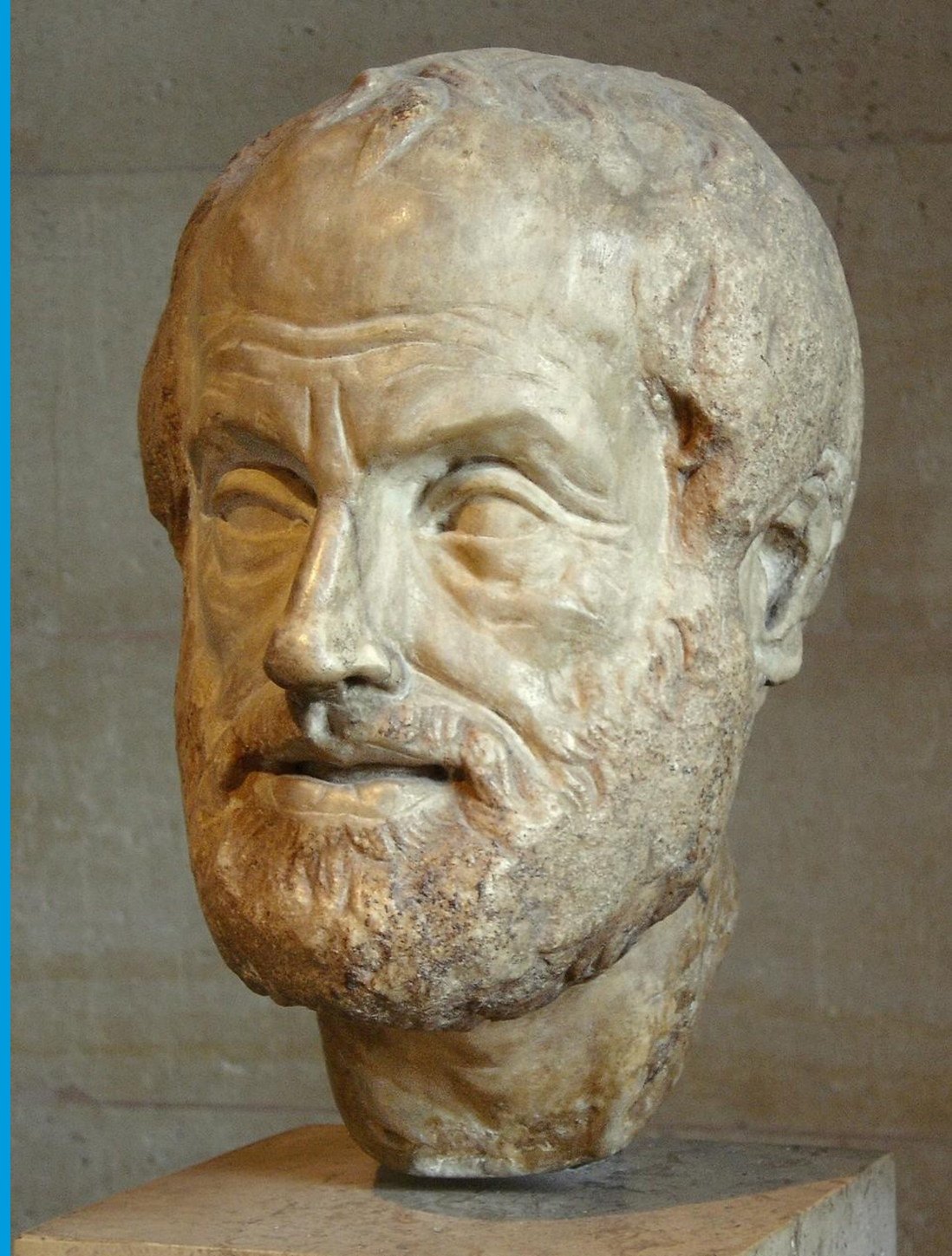
Aristotele - filosofo greco antico, ricercatore. Insieme a Socrate e Platone, è considerato il pensatore più influente nella storia della filosofia occidentale, nonostante la maggior parte delle sue affermazioni siano state confutate da scienziati e filosofi successivi.



GEOMETRICAL SYMMETRY

Rotational symmetry - when an object can be rotated (about an axis of symmetry) without changing the overall shape of the object.

Mirror symmetry (also called reflection symmetry) is when there is a line of symmetry running through an object that divides it into two parts that are mirror images of each other.

Displacement symmetry is when an object can be moved in any direction without changing the overall shape of the object.

Helical symmetry is when an object can be simultaneously translated and rotated in three-dimensional space along a line called the axis of the helix without changing the overall shape of the object.

Scale symmetry is when an object is enlarged or reduced (scaled) without changing its overall appearance.

Sliding reflection symmetry

MATHEMATICAL SYMMETRY

Rotational Symmetry- when the image is rotated (around a central point) so that it appears 2 or more times
Point Symmetry - when, given a central point on a shape or object, every point on the opposite sides is the same distance from the central point.
Central symmetry (symmetry with respect to an internal point) - when there is such a point inside the figure that always divides the line segments connecting the elements on opposite sides in half. As a rule, this point coincides with the center of the figure and can also be called the center of symmetry.
Axial symmetry (symmetry with respect to a line) - when there is a line that divides the figure into equal reflections. This line is called the axis of symmetry of the figure. Axial symmetry of space is a rotation of 180 degrees around the axis of symmetry.
Symmetry with respect to a plane - when there is such a plane that divides the three-dimensional figure into equal reflections
Glide symmetry (or transflection) - a symmetry operation that consists of a reflection over a line and then translation along that line, combined into a single operation.
Translational symmetry - when something has undergone a movement, a shift or a slide, in a specified direction through a specified distance without any rotation or reflection.

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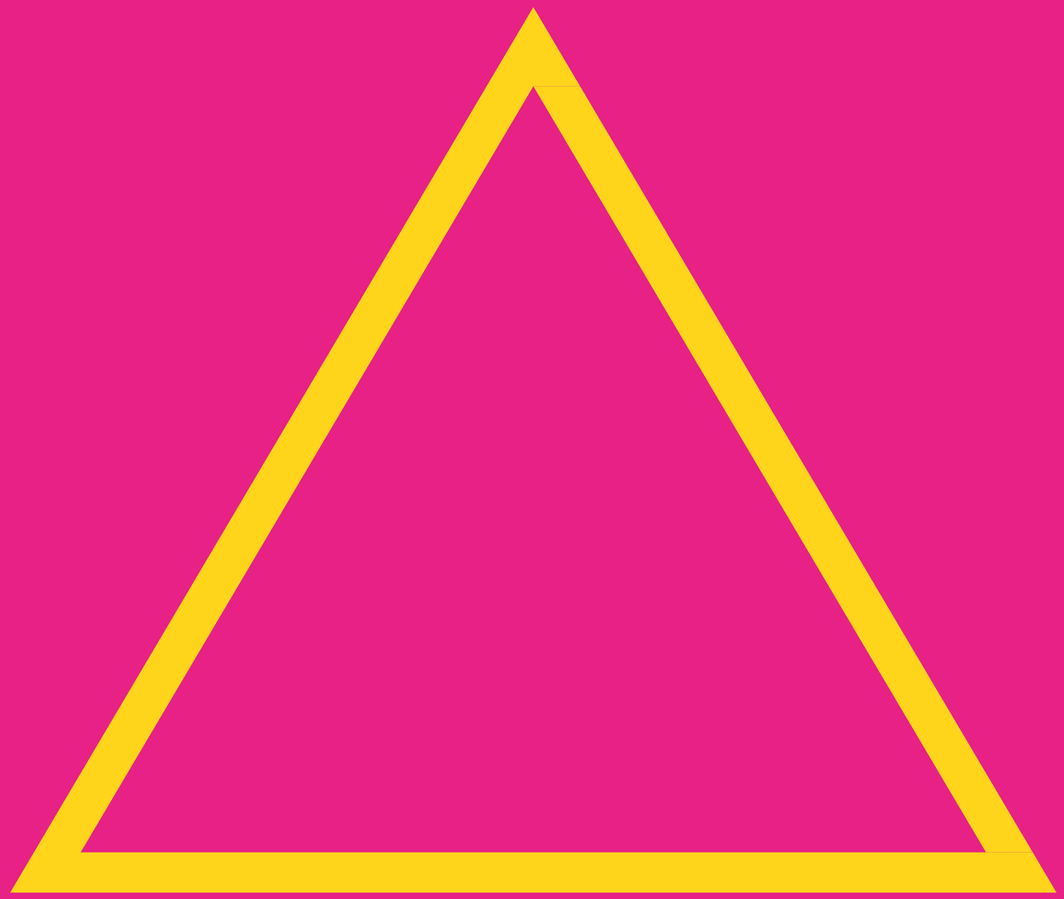
Quanti assi di simmetria ha un triangolo?



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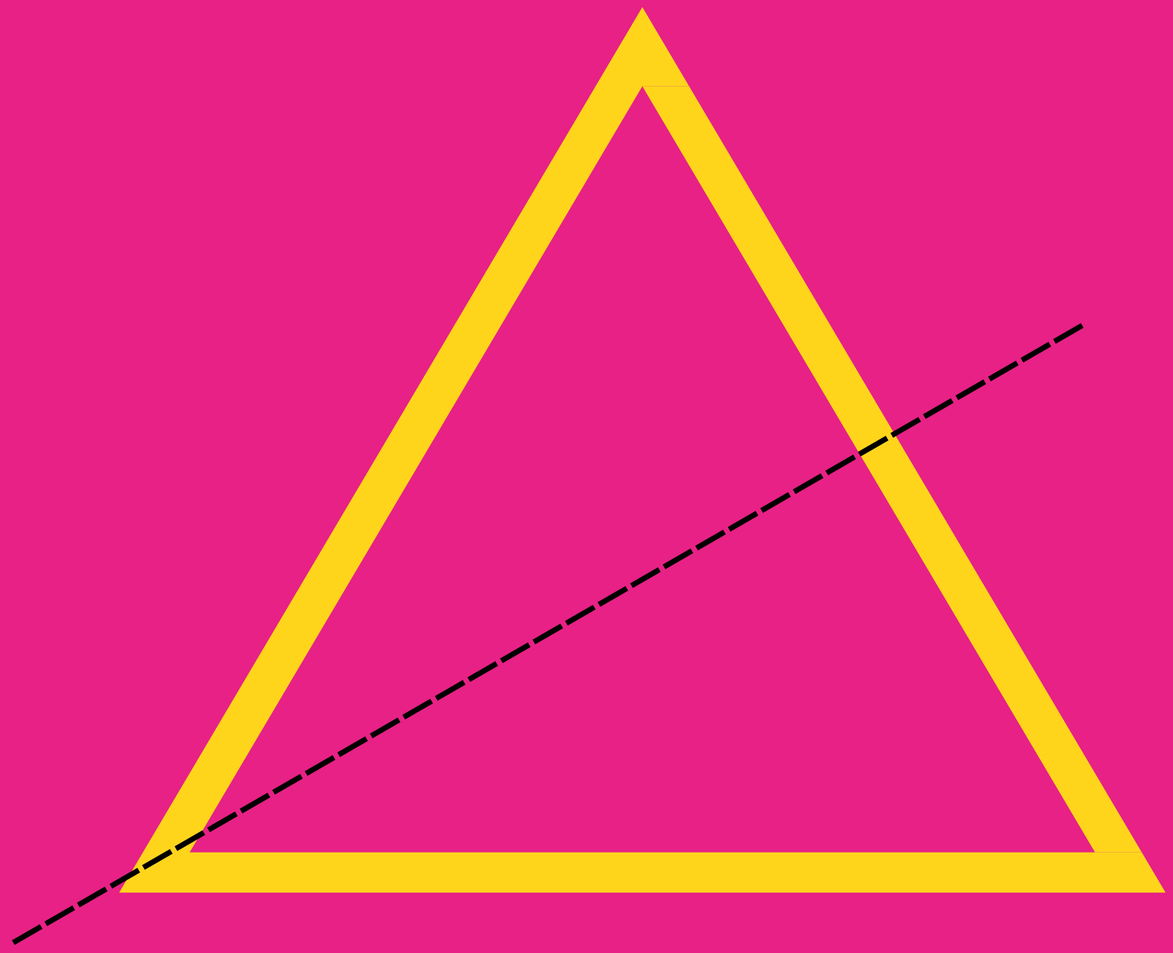

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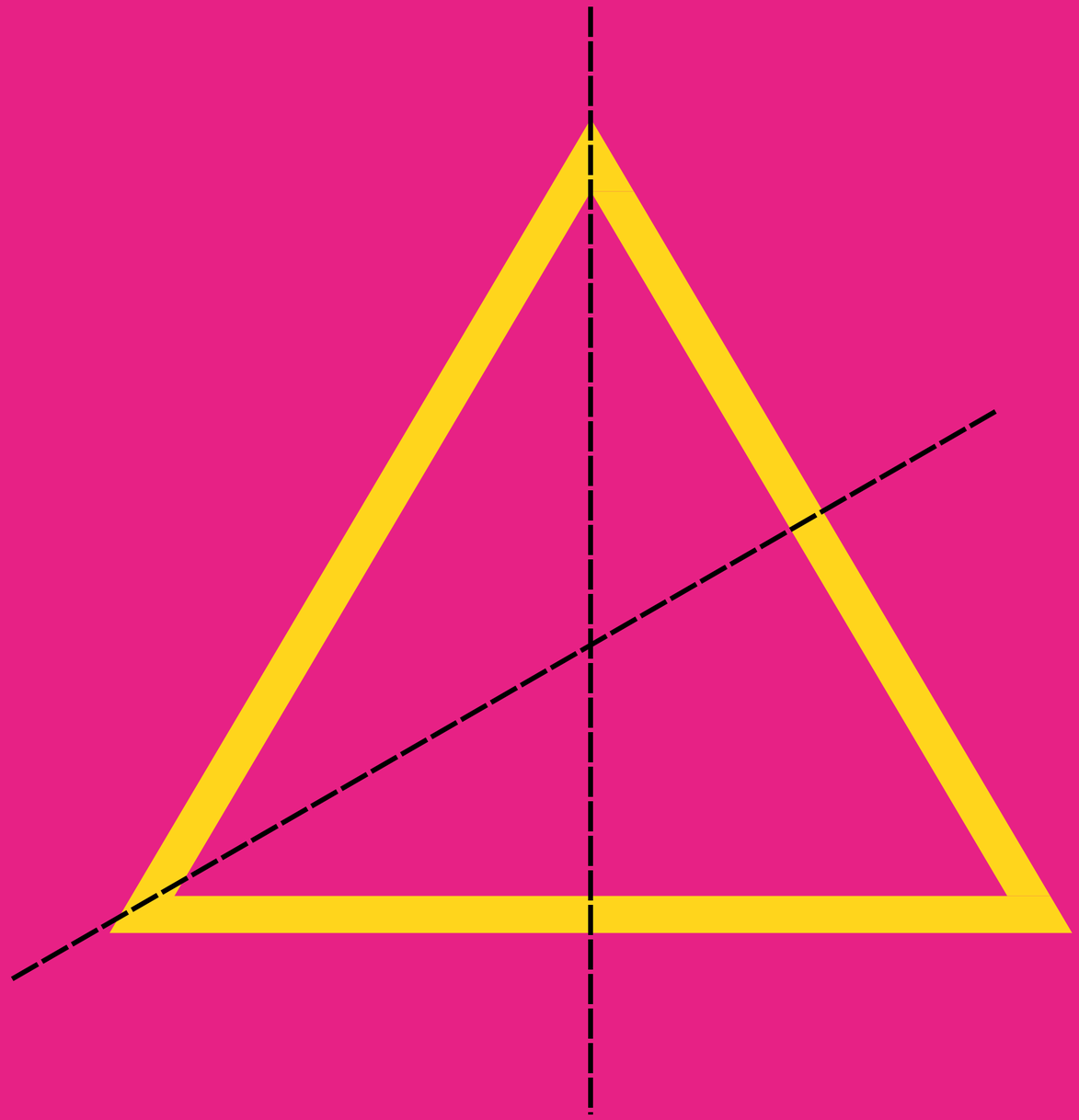

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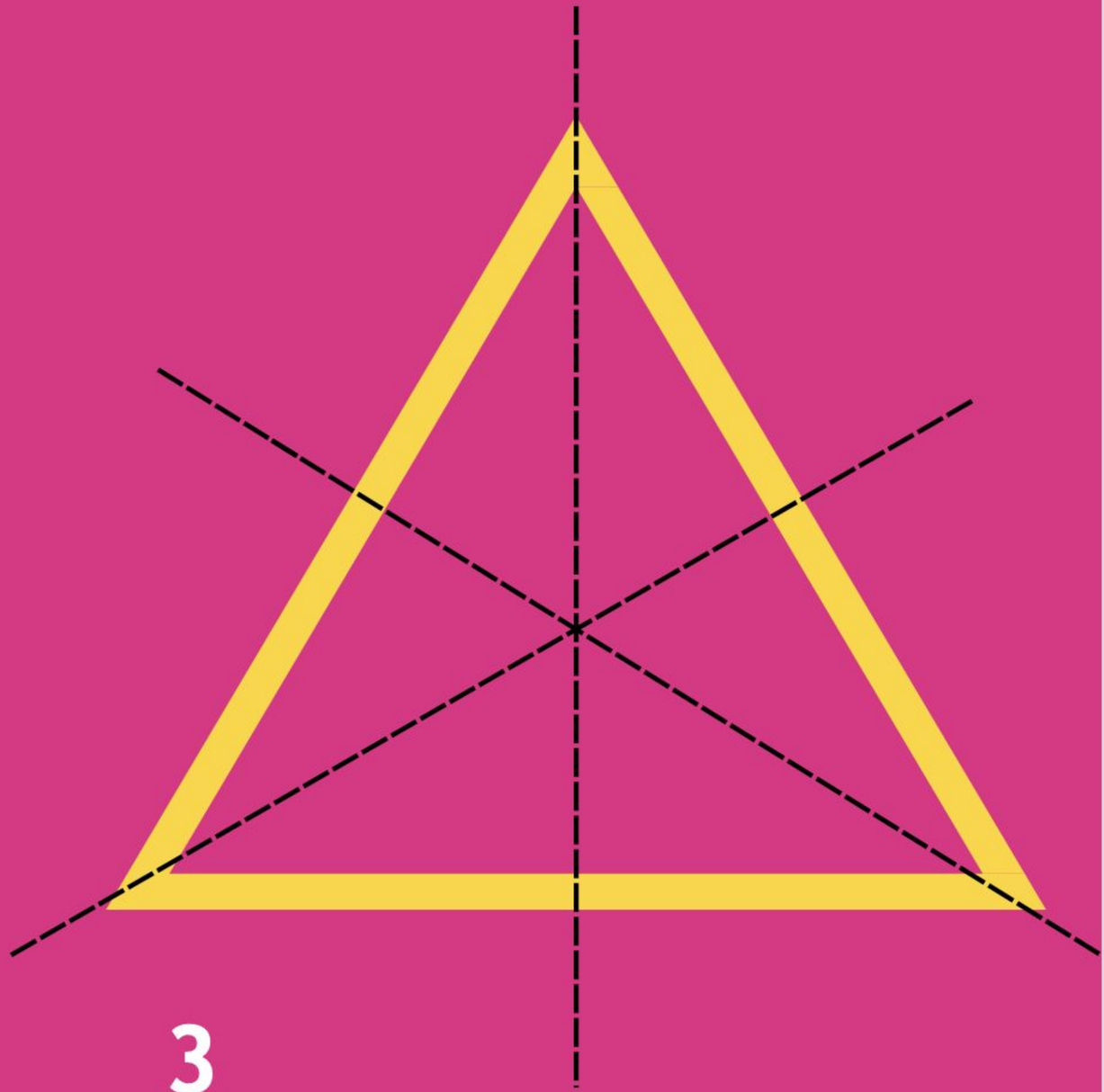

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Quanti sono gli assi di simmetria?

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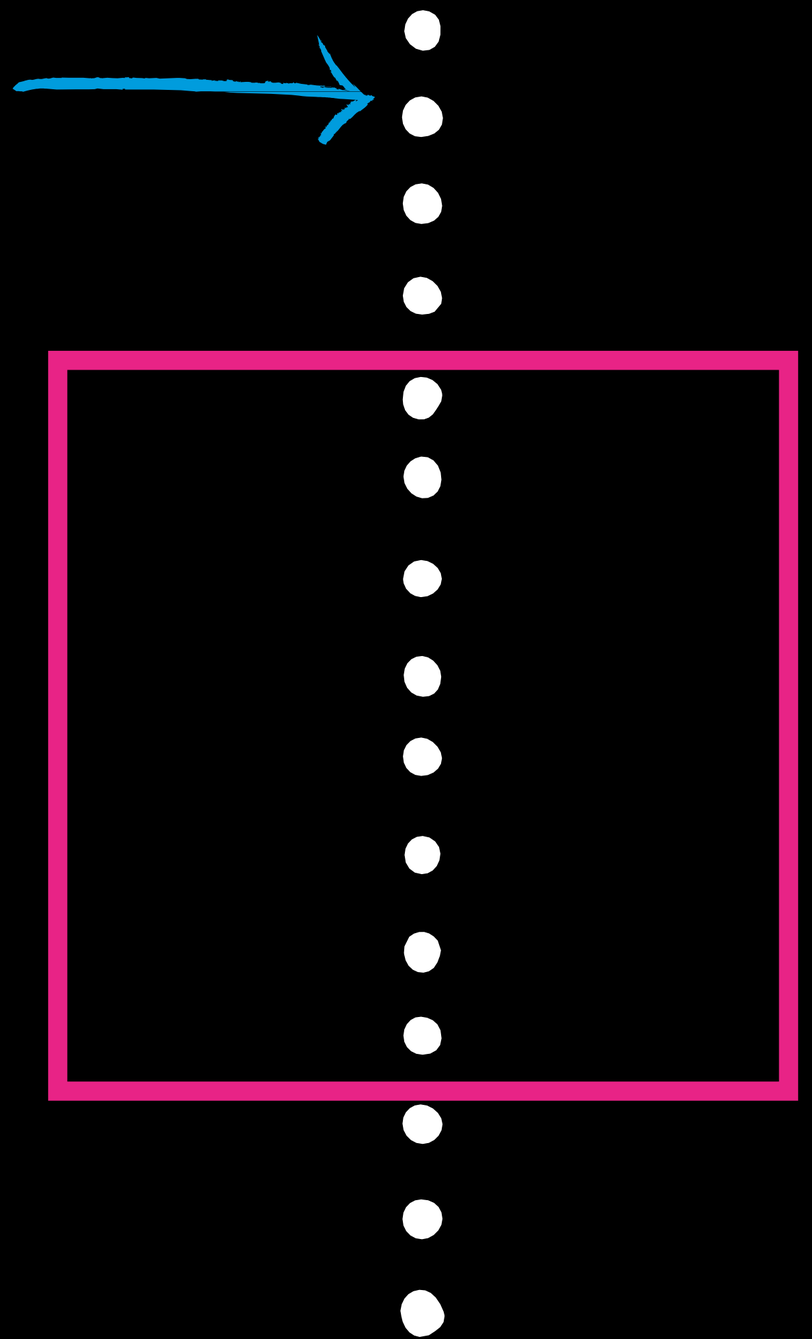
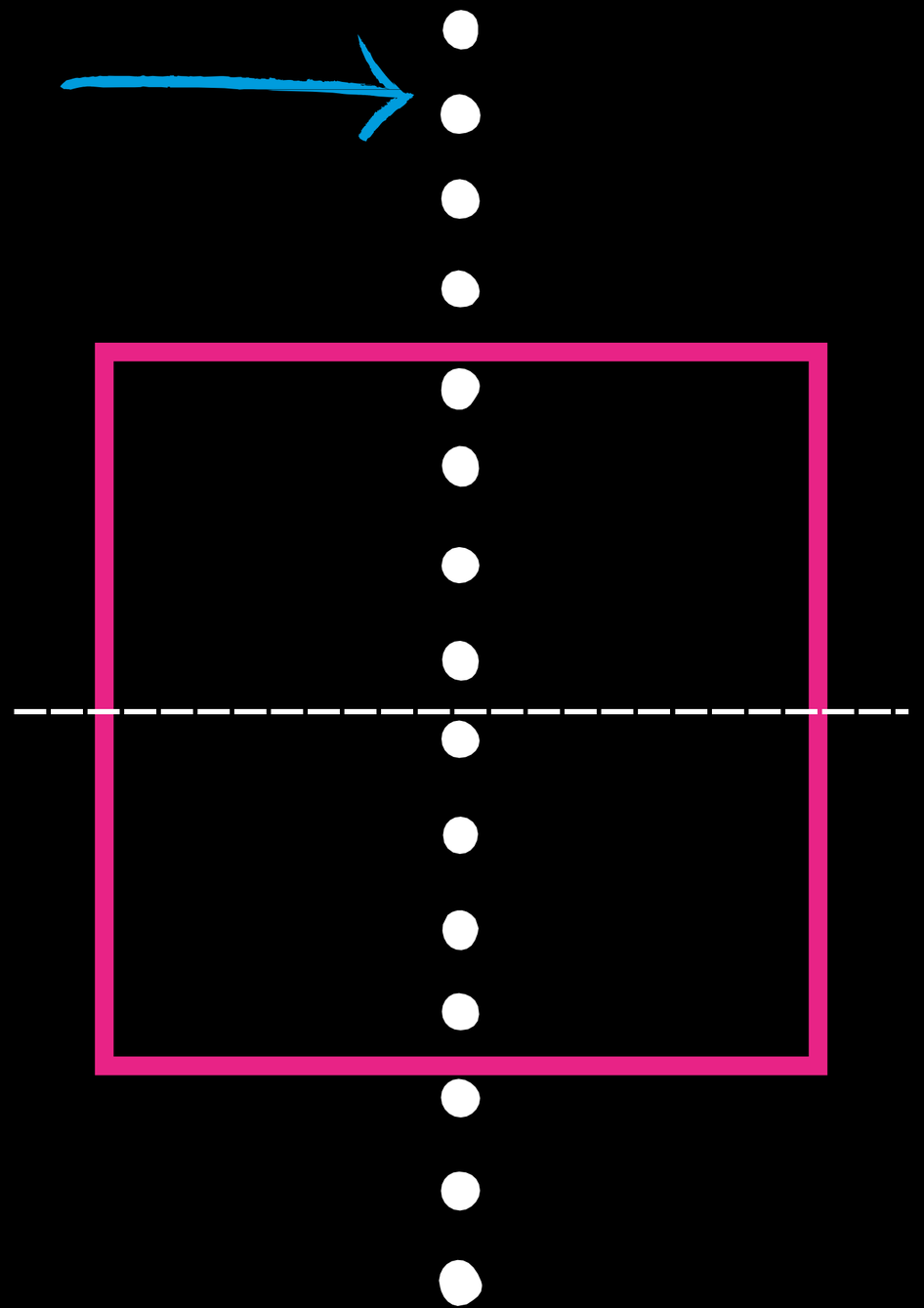
Asse di simmetria



Asse di simmetria



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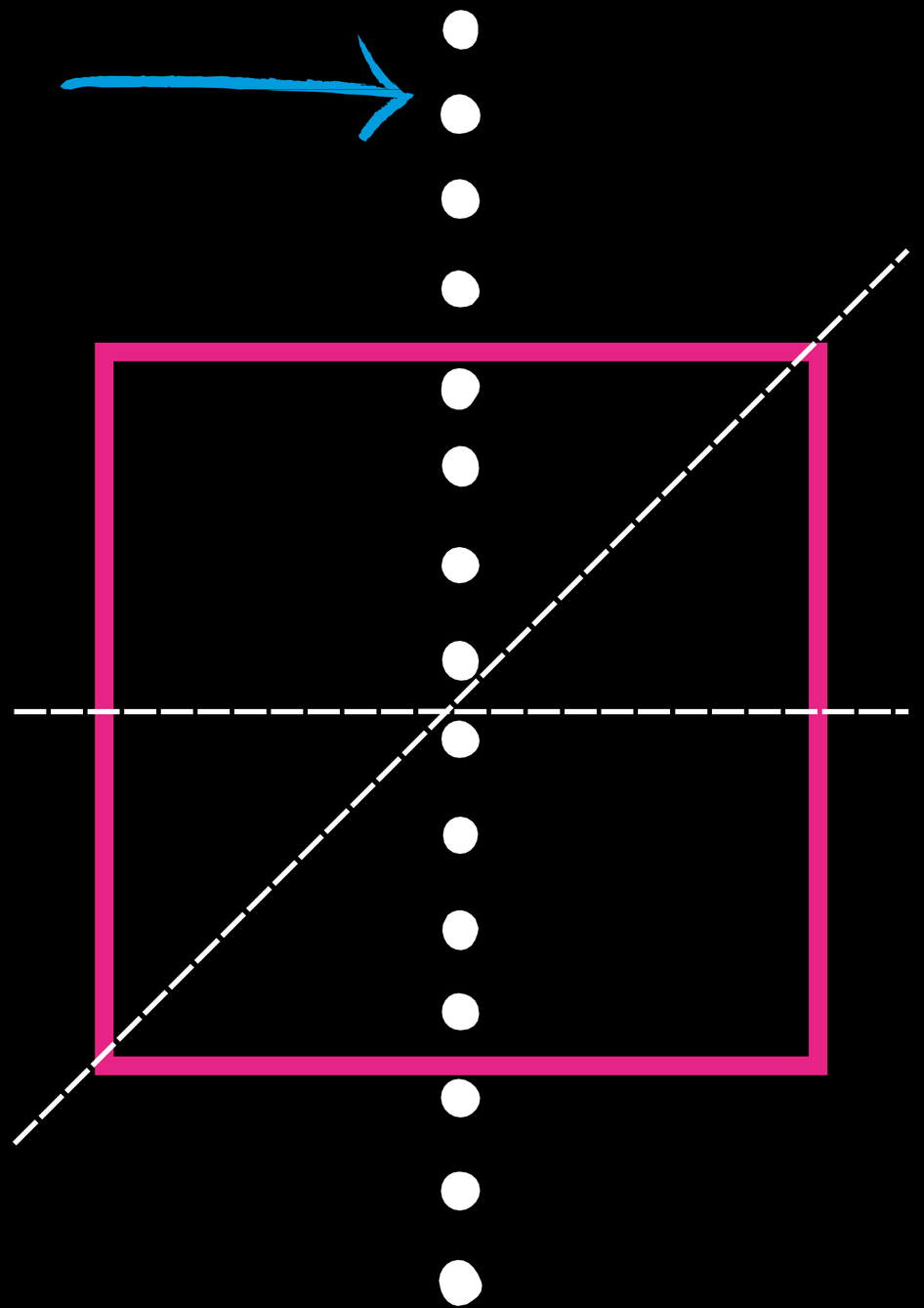

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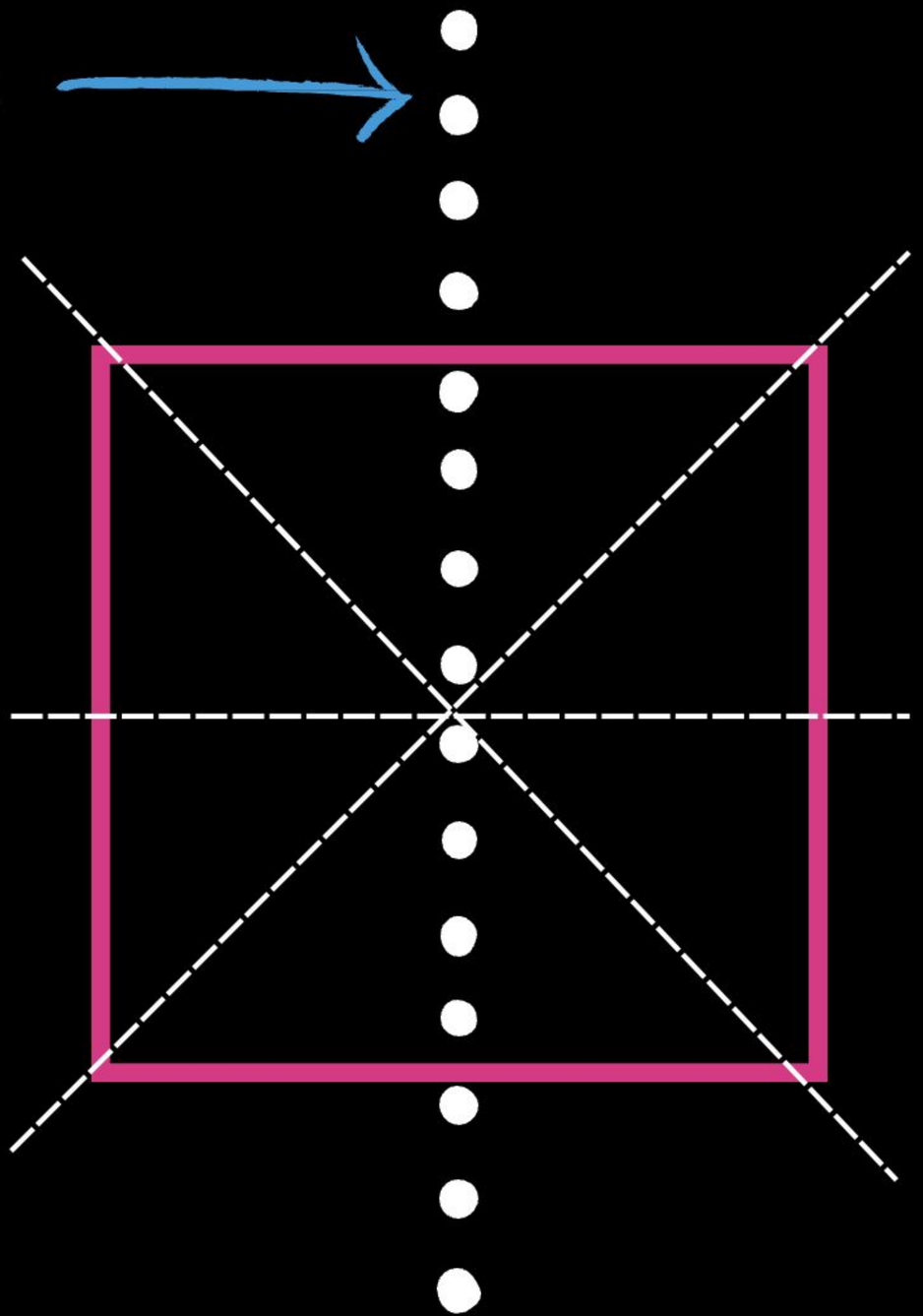

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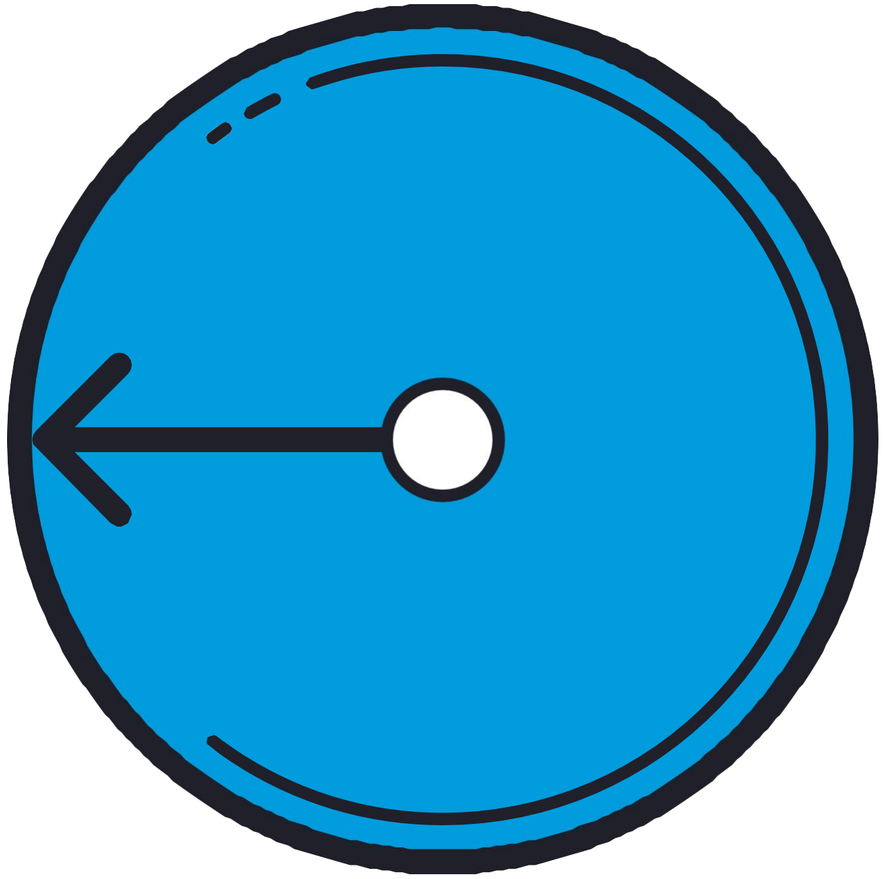
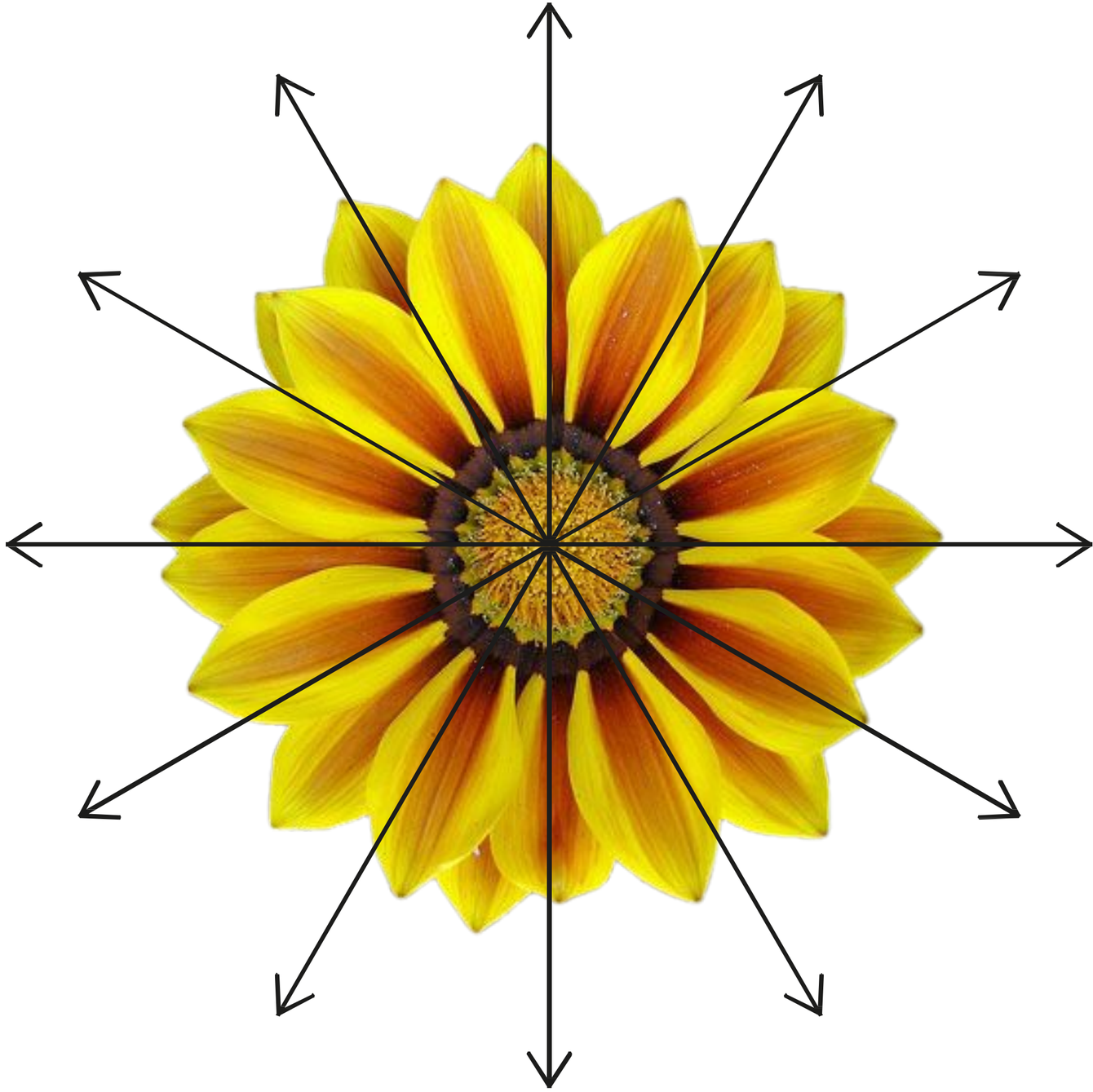




Dove si può verificare la simmetria radiale?

BIOLOGICAL SYMMETRY

Biological symmetry is a proportional distribution of equal body parts or shapes. Almost all multicellular organisms exhibit some form of symmetry, usually radial, bilateral, or spherical. Some animals are even asymmetrical.

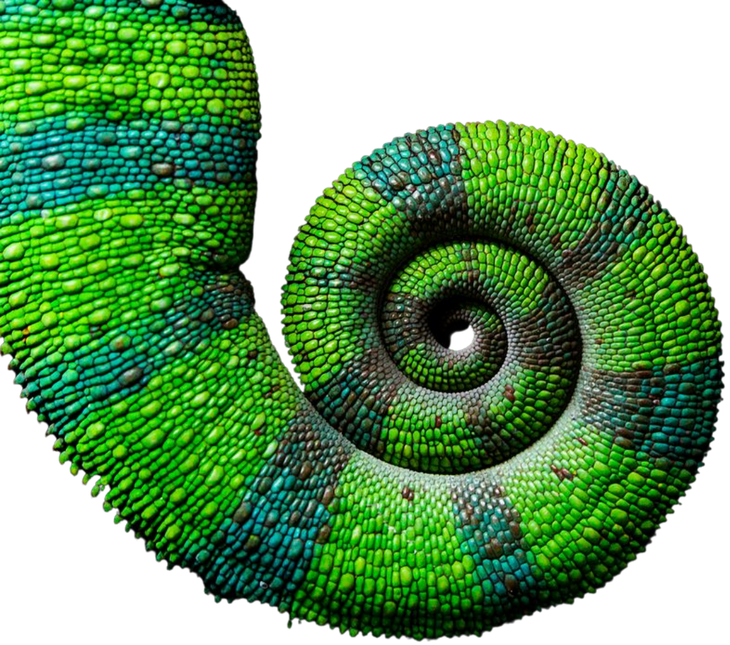
In nature and biology, symmetry is approximate. For example, although plant leaves are considered symmetrical, they rarely line up exactly when folded in half.

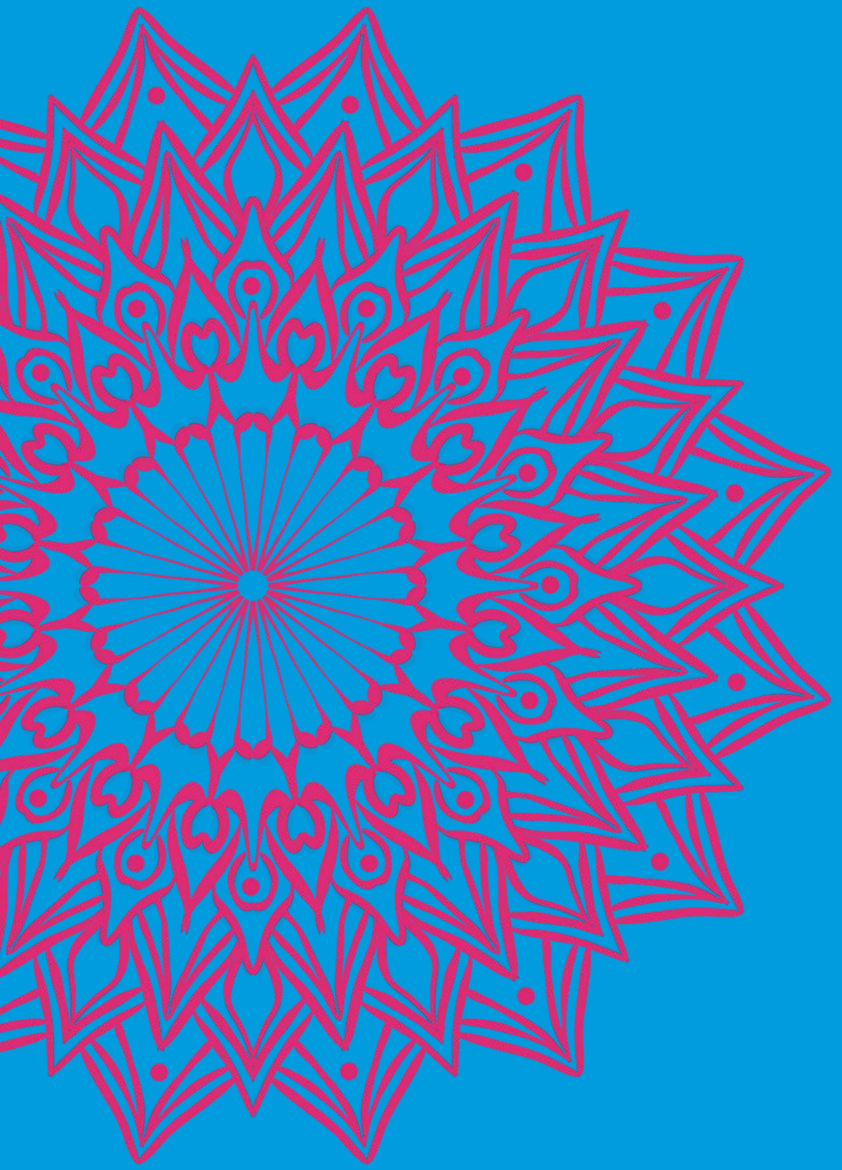
CHE COS'È UN MODELLO?

SCHEMA

un insieme di eventi, movimenti o elementi correlati che si susseguono in un particolare ordine

Esempi di schemi in natura





CHE COS'È UN MANDALA?

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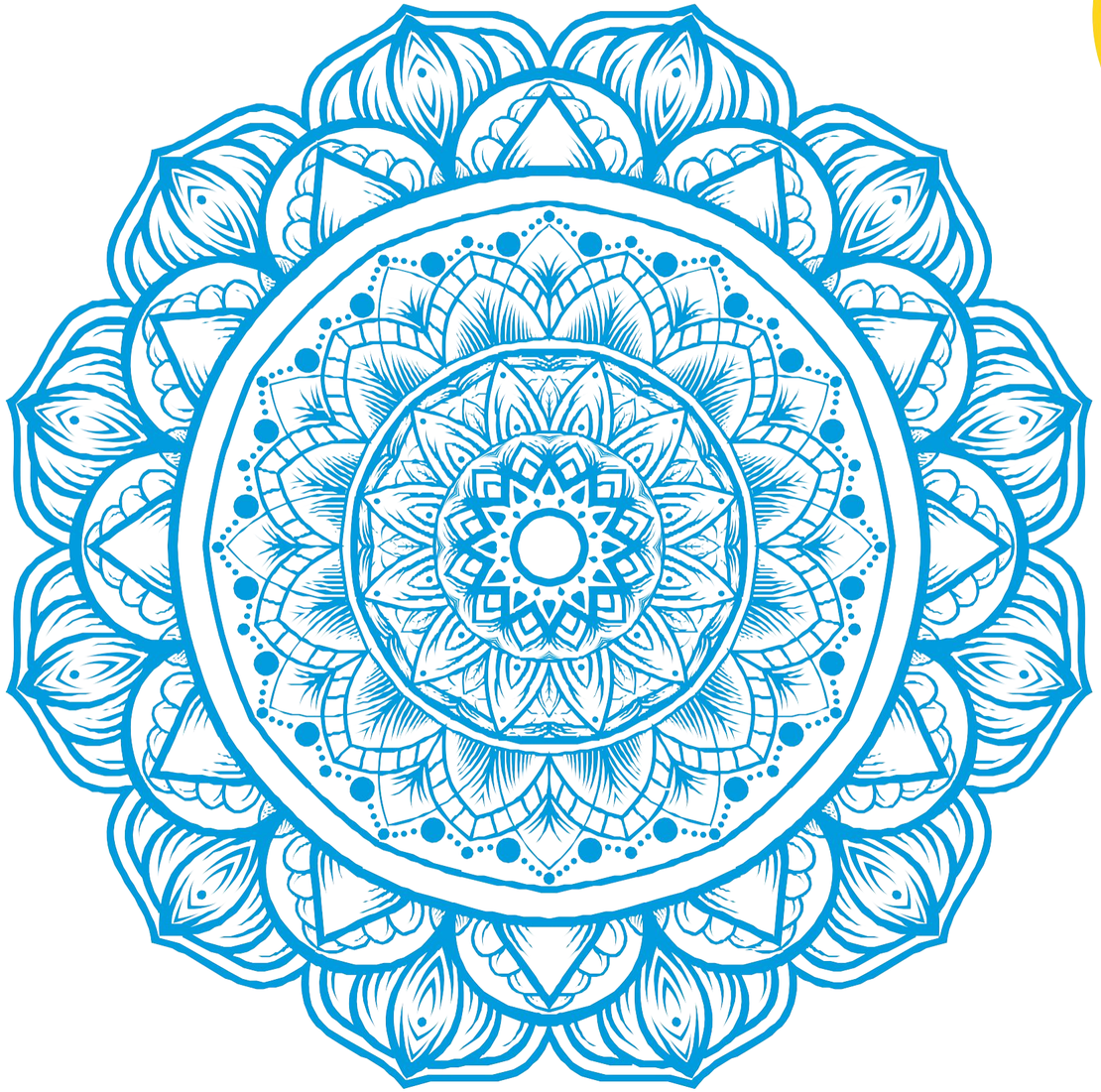
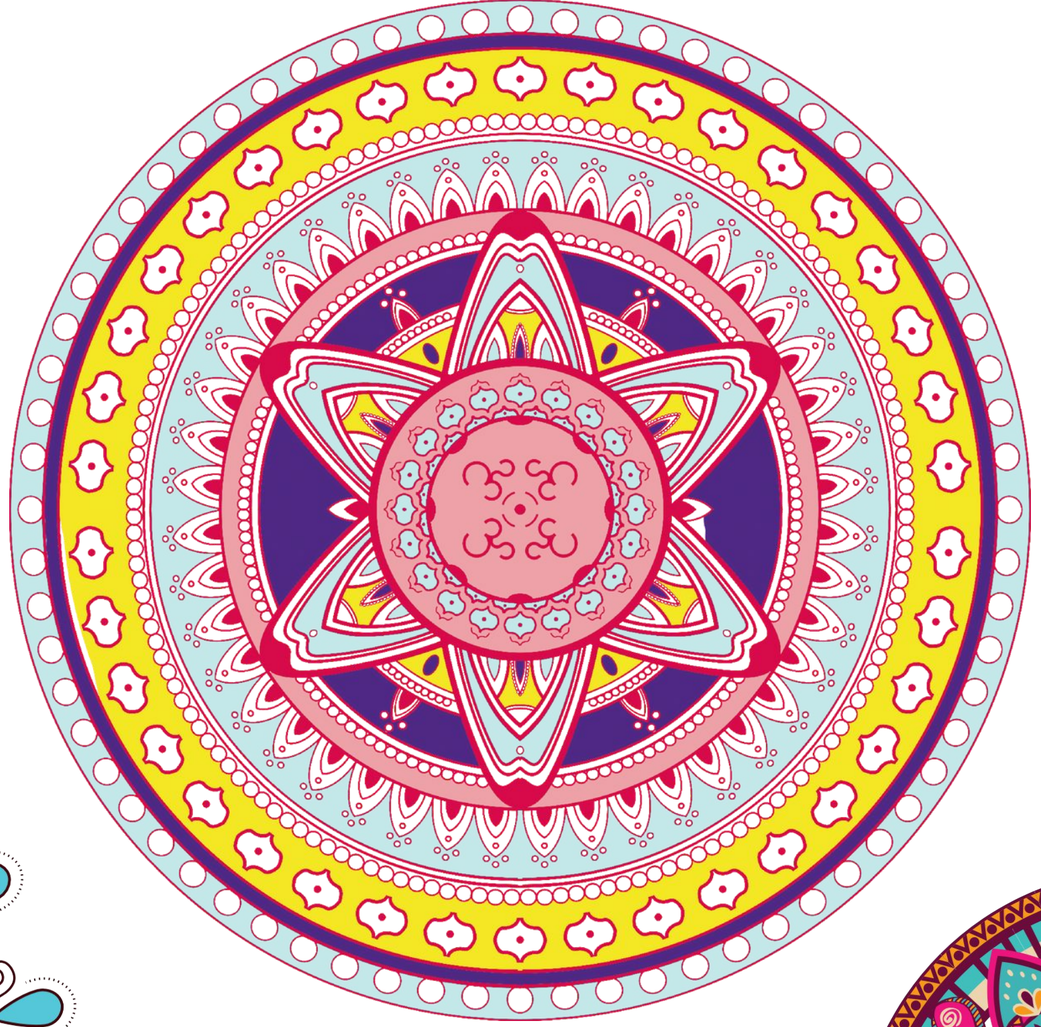
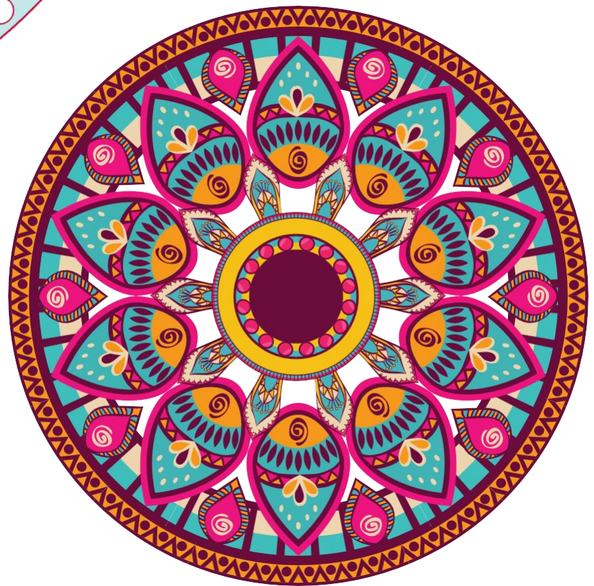
Mandala

una composizione geometrica a forma di cerchio o di quadrato







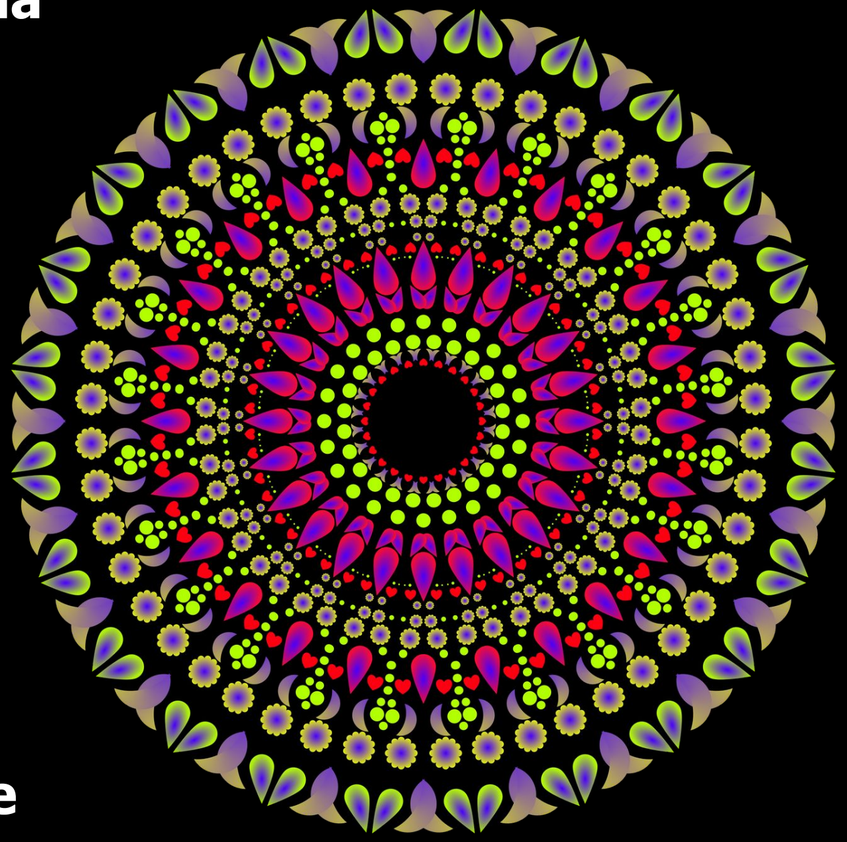
Il significato dei colori

Giallo: potere, luce, gioia

Bianco: purezza, unità

Verde: pace, natura

Rosso: fuoco, passione



Arancione: alta energia, calore

Nero: mistero, oscurità

Viola: il colore dei desideri

Blu: protezione, pace, freddezza

ATTIVITÀ

Create il vostro mandala unico su un CD

ARTICOLI NECESSARI

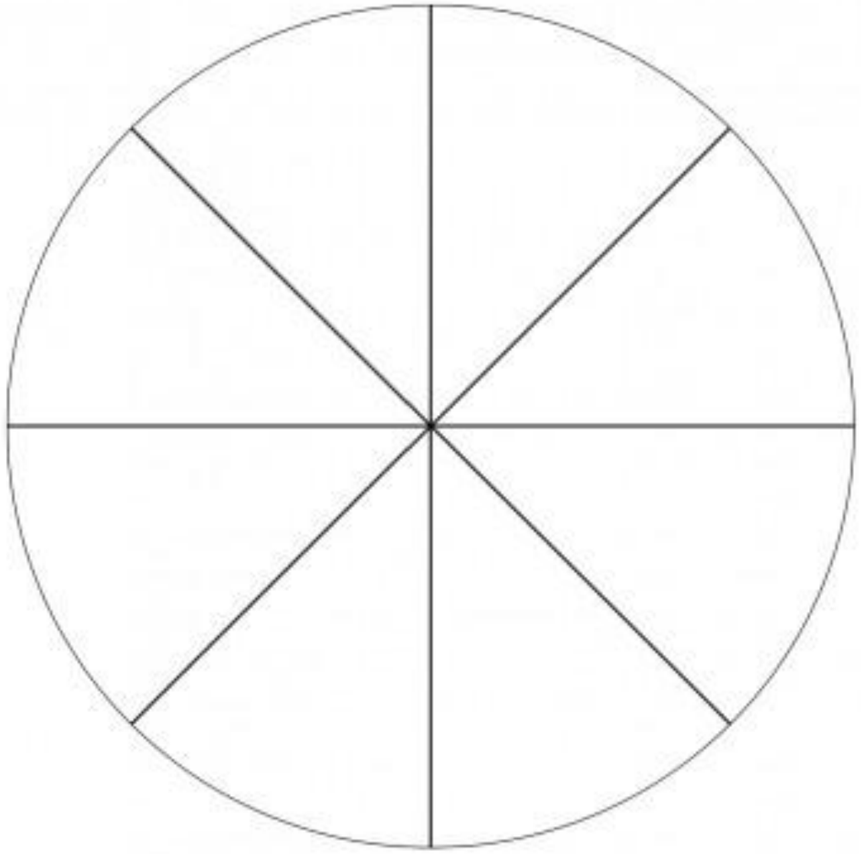
Disco CD

Righello

Pennarelli acrilici, pennarelli

Adesivi, glitter...

Disegniamo gli assi di simmetria



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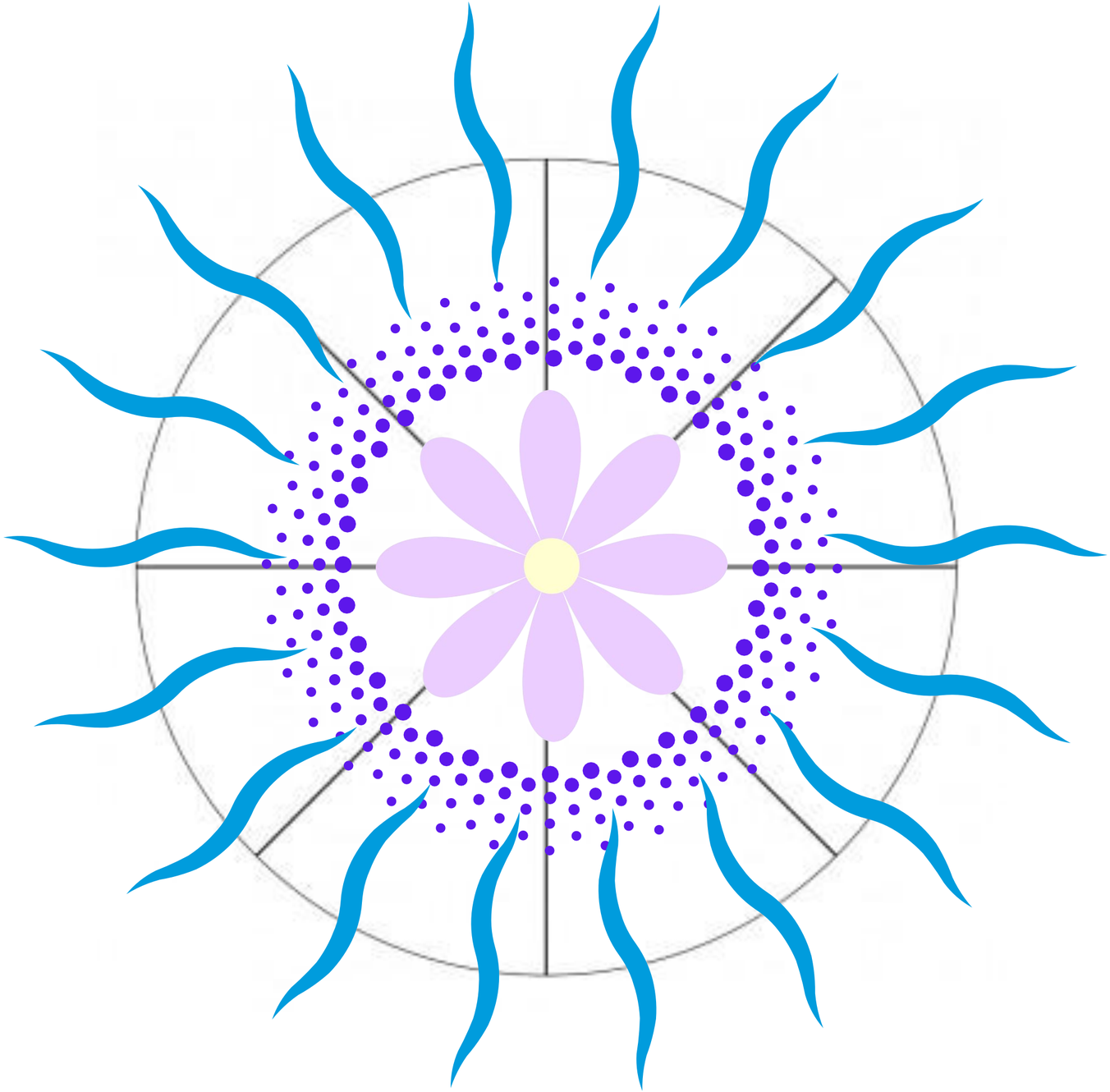

I soggetti che si occupano del completamento di questo compito

Matematica
Storia
Arte
Biologia
Lingua inglese.

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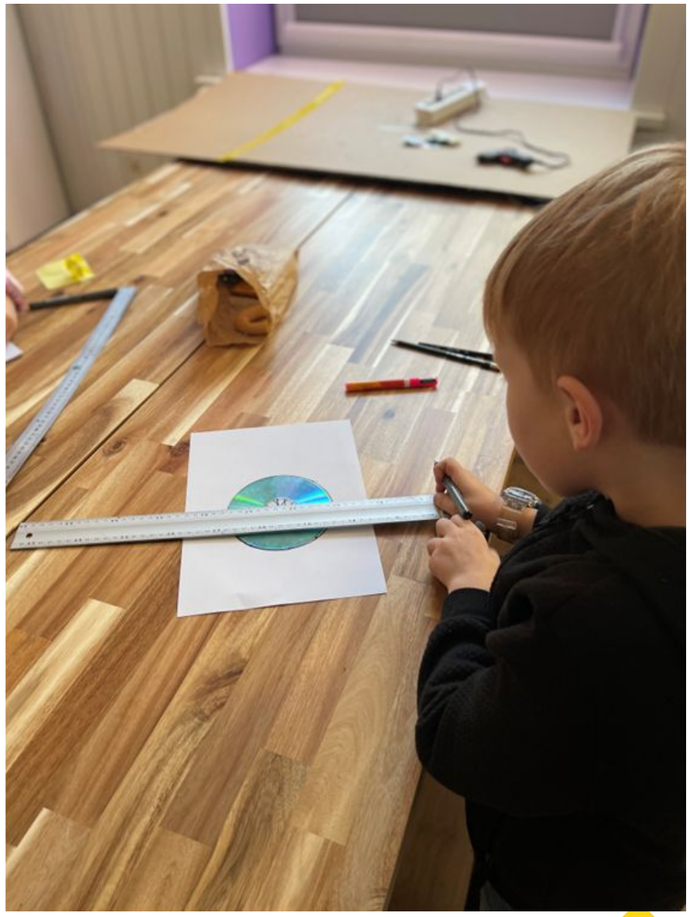

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