

Mandalas in Nature

Grade 1-6

Discover the art and math of nature with mandalas! Students will explore patterns, symmetry and design by creating circular artworks from leaves, stones, flowers, and other natural treasures. This hands-on outdoor activity blends creativity, mindfulness, and mathematical thinking while connecting to global and Indigenous traditions of circular design. Perfect for fostering observation, cooperation, and a deeper connection to the natural world

<p>Learning Objectives</p>	<p>By the end of the activity, students will:</p> <ul style="list-style-type: none"> • Collect natural materials respectfully and safely. • Create a mandala (circular design) using patterns, shapes, and symmetry. • Explore mathematical ideas of patterning, geometry, and reflection/rotational symmetry. • Connect to Indigenous and global uses of mandalas and circular designs. • Reflect on creativity, mindfulness, and connection to nature.
<p>Curriculum Connections</p>	<p>Art</p> <ul style="list-style-type: none"> • Creating two- and three-dimensional works that express personal ideas (Gr. 1–6). • Using elements of design (line, shape, colour, space, symmetry, repetition). <p>Science</p> <ul style="list-style-type: none"> • Life Systems: respect for natural materials and ecosystems. <p>Math</p> <ul style="list-style-type: none"> • Patterning and Algebra: identifying, extending, and creating patterns (Gr. 2–6). • Geometry and Spatial Sense: exploring symmetry, shapes, and rotations (Gr. 2–6). • Fractions (Gr. 4–6): dividing circles into equal parts. <p>Social Studies</p> <ul style="list-style-type: none"> • Global connections: circles and mandalas in world cultures (including Indigenous teachings about the medicine wheel).
<p>Materials</p>	<ul style="list-style-type: none"> • Natural objects: leaves, flowers, stones, pinecones, sticks, acorns, seeds, shells (collected respectfully). • Optional: hula hoops, rope, or chalk to outline circle bases. • Camera/tablet to photograph finished mandalas (as they won't last forever). • Optional: print out Nature Mandala examples (see attached) • Optional: print out Cultural Mandala examples (see attached)
<p>Prep/Pre Set-up required</p>	<ul style="list-style-type: none"> • Establish safe boundaries for nature collection. • Discuss ethical gathering: take only fallen items, leave living plants in place. • Mark spaces for groups or individuals to build their mandalas. • Have a few sample photos of mandalas for inspiration.

<p>Introduction</p>	<ul style="list-style-type: none"> • Introduce the activity: <i>“We’re going to explore patterns in nature and create mandalas!”</i> • Define a mandala: circular design using repetition, symmetry, and balance. • Explain the materials: natural objects like leaves, stones, flowers, pinecones. • Connect to observation: notice shapes, colors, textures, and patterns in nature. • Highlight cross-curricular links: <ul style="list-style-type: none"> ○ Math: patterns, symmetry, fractions, geometry. ○ Art: design elements, balance, creativity. ○ Social Studies / Culture: Indigenous teachings, global mandalas (see info sheet). • Set the tone: encourage mindfulness, patience, and teamwork. • Prompt curiosity: <i>“How can the natural world inspire your designs?”</i>
<p>Main Activities</p>	<ul style="list-style-type: none"> • Collect natural objects from the designated area. • Begin building from the centre outwards, creating repeating patterns in a circular shape. • Encourage use of symmetry, balance, and repetition. • Once completed, groups present their mandalas and explain their design choices. • Photograph mandalas before leaving them to return naturally to the environment. <p>Prompt Questions:</p> <ul style="list-style-type: none"> • What shapes and patterns did you notice in nature before starting? • How did you decide on your pattern or design? • Does your mandala have symmetry? How can you tell? • How do circles or patterns show up in nature (flowers, ripples, shells)?
<p>Free/Inquiry Play Focus</p>	<ul style="list-style-type: none"> • Students may continue exploring different designs, combining mandalas, or making 3D structures with their found objects. • Encourage mindfulness: notice colours, textures, smells, and sounds while working.
<p>Closing and Wrap-up</p>	<ul style="list-style-type: none"> • Circle sharing: students reflect on what they found calming, challenging, or surprising. • Connect to the mathematics of symmetry and the art of storytelling in shapes and patterns. • Reflection prompt: <i>“What did your mandala teach you about nature and patterns?”</i>
<p>Social/Emotional Skills Targeted</p>	<ul style="list-style-type: none"> • Mindfulness and calm focus. • Cooperation and compromise in group work. • Creative self-expression and confidence in sharing.
<p>Grade-Level Adaptations & Curriculum Links</p>	<p>Kindergarten – Grade 1</p> <ul style="list-style-type: none"> • Focus on shapes, colours, and simple patterns. • Use body movements to explore circular patterns (e.g., walking in a spiral). • Curriculum: Early math (patterning, shapes), Visual Arts (line and colour). <p>Grades 2–3</p>

	<ul style="list-style-type: none"> • Introduce symmetry and simple fractions (half, quarter). • Discuss repeating patterns and natural cycles (seasons, life cycles). • Curriculum: Math (patterning, 2D geometry), Visual Arts (repetition, balance). <p>Grades 4–6</p> <ul style="list-style-type: none"> • Explore rotational symmetry, tessellations, and fractional parts of circles. • Connect to Indigenous worldviews (medicine wheel, cycles of nature). • Curriculum: Math (fractions, geometry, rotational symmetry), Social Studies (global cultural practices), Visual Arts (design elements).
<p>Application Next Steps, Connections, applications, variations, extensions</p>	<p>Math</p> <ul style="list-style-type: none"> • Measure angles in the mandala to explore fractions of a circle. • Create bar graphs of materials used (stones vs. leaves vs. pinecones). <p>Arts & Culture</p> <ul style="list-style-type: none"> • Explore medicine wheels in Indigenous teachings. • Study mandalas from other cultures (Tibetan sand mandalas, Celtic knots). <p>Outdoor Learning</p> <ul style="list-style-type: none"> • Create seasonal mandalas to compare colours and materials across the year. • Make giant group mandalas as a whole class project. <p>Extensions</p> <ul style="list-style-type: none"> • Literacy: <ul style="list-style-type: none"> ○ Write a poem or story inspired by the mandala. • Science: <ul style="list-style-type: none"> ○ Discuss how natural cycles (life cycles, water cycles, moon phases) connect to circles and patterns. • Technology: <ul style="list-style-type: none"> ○ Use a digital drawing tool to replicate or expand the mandala designs.



Cultural significance of Mandalas around the world

1. Indigenous Teachings (North America)

- Medicine Wheel:
 - Circular symbol representing balance, interconnectedness, and the cycles of life (physical, mental, emotional, spiritual).
 - Colors, directions, and seasons have specific meanings in many Indigenous traditions.
 - Mandalas can be used for reflection, healing, and understanding relationships within the natural world.
 - Connection to Nature:
 - Emphasizes respect for the environment and cycles of life.
 - Patterns and symmetry in nature often inspire the design of these circular teachings.
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2. Hinduism & Buddhism (Asia)

- Tibetan Sand Mandalas:
 - Intricate, symmetrical designs made from colored sand.
 - Represent the universe, impermanence, and meditation.
 - Often destroyed after completion to symbolize the transient nature of life.
 - Yantras (Hinduism):
 - Geometric patterns representing spiritual concepts and meditation aids.
 - Used to focus the mind and explore cosmic patterns.
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3. Celtic Traditions (Europe)

- Celtic Knots and Circular Designs:
 - Circular patterns symbolize eternity, cycles, and interconnectedness.
 - Often used in artwork, jewelry, and manuscripts.
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4. Global & Modern Perspectives

- Circle as a Universal Symbol:
 - Represents unity, wholeness, cycles, and connection to nature.
 - Found in art, architecture, and spiritual practices worldwide.
- Modern Mindfulness & Therapy:
 - Creating mandalas is used in schools and therapy to encourage focus, relaxation, and self-expression.

Indigenous Teachings (North America)



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 - Mandalas can be used for reflection, healing, and understanding relationships within the natural world.
- **Connection to Nature:**
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Hinduism & Buddhism (Asia)



Tibetan Sand Mandalas:

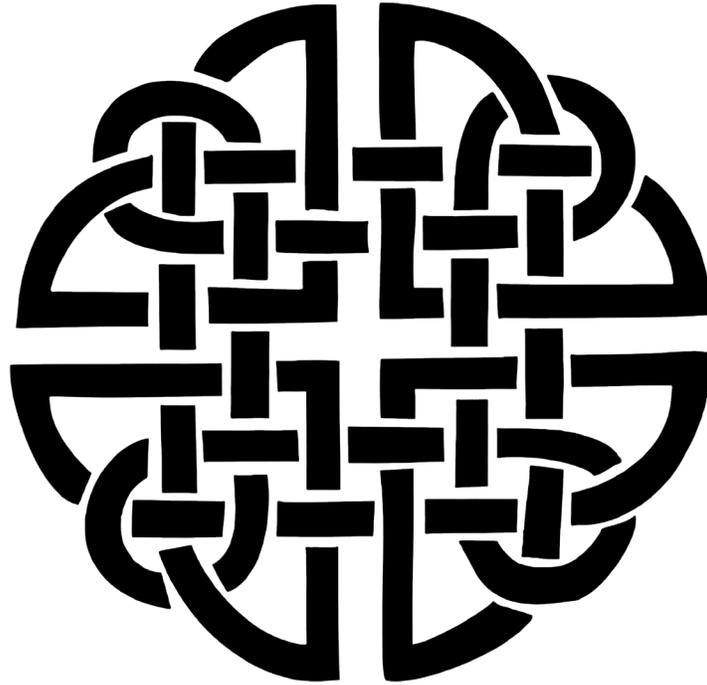
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Yantras (Hinduism):

- Geometric patterns representing spiritual concepts and meditation aids.
- Used to focus the mind and explore cosmic patterns.

Celtic Traditions (Europe)



- Celtic Knots and Circular Designs:
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