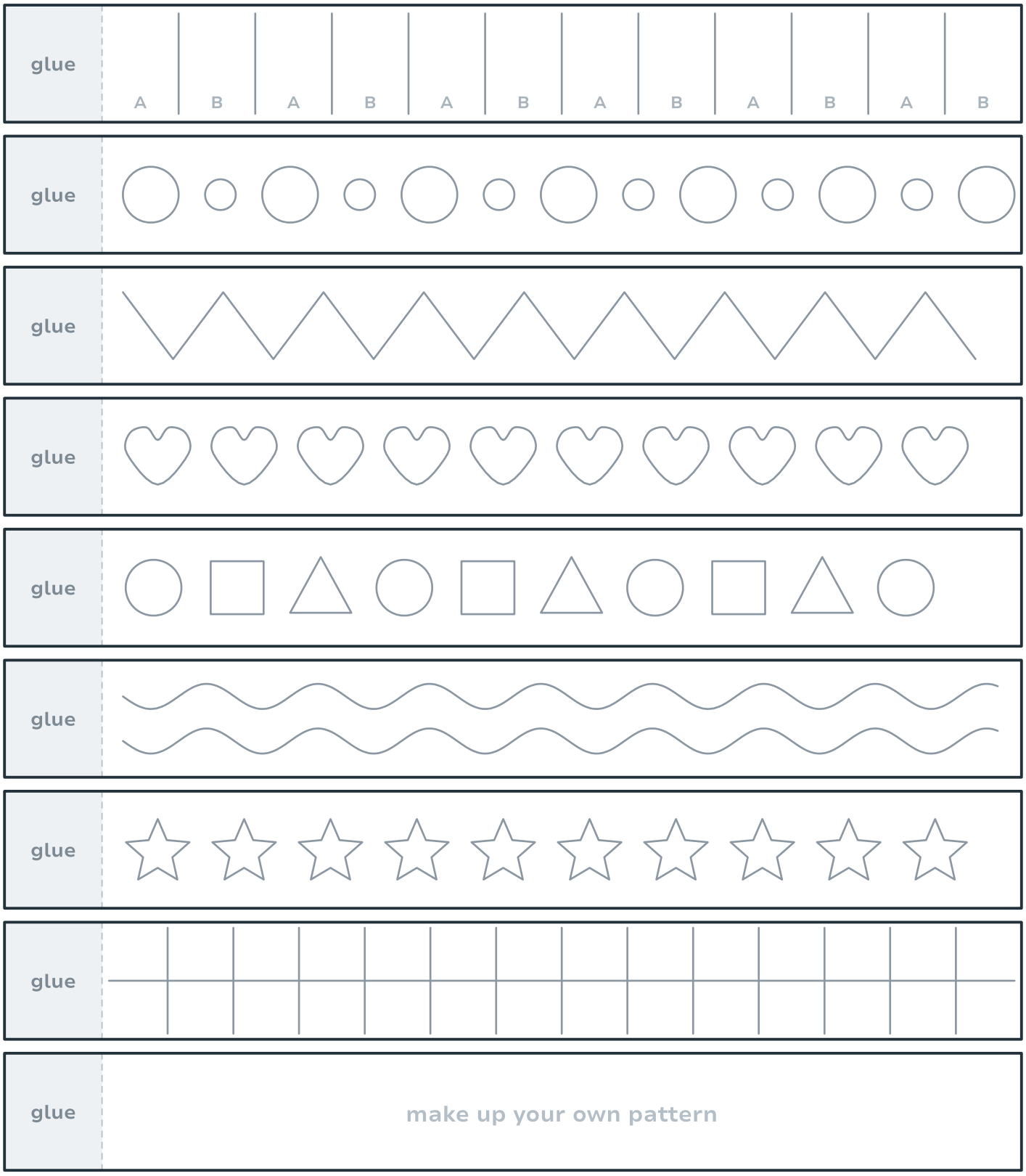
PROJECT 1 · PATTERN PAPER CHAIN

Pattern paper chain

cut
fold



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Pattern paper chain

Ages 5-9 | 20-30 min | Mess: Low | Copy paper or colored paper

You need

- Printed strips
- Crayons or markers
- Scissors
- Glue stick or tape

Skills practiced

- Cutting straight lines
- Repeating patterns

LESSON LINK

Spot, extend and invent repeating patterns (AB, ABC, AAB).
Grades: K-2
Ties to: Math: patterns. Art: color and rhythm.

Steps

1. Color each strip. Keep each pattern going to the end, or make up your own on the blank strip.
2. Cut the strips apart on the black lines.
3. Curl the first strip into a loop and glue its end onto the gray glue box.
4. Thread the next strip through the loop and glue it the same way.
5. Keep adding links. Hang the chain or join it to a friend's.

Tip: Make it a countdown chain: write a number on each link and tear one off each day.

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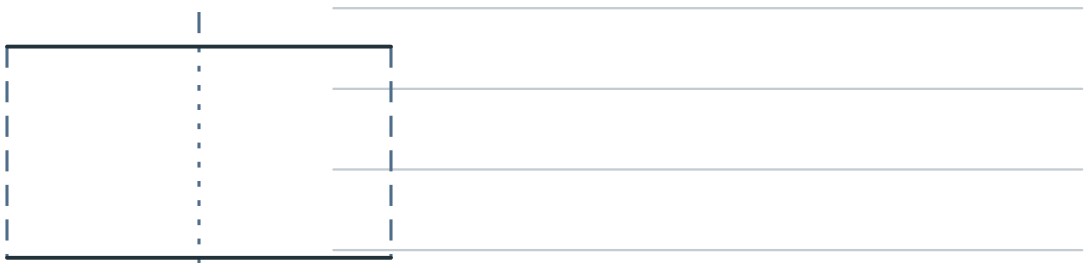
Pop-up card

cut
fold
fold the other way

INSIDE OF YOUR CARD

Write your message here

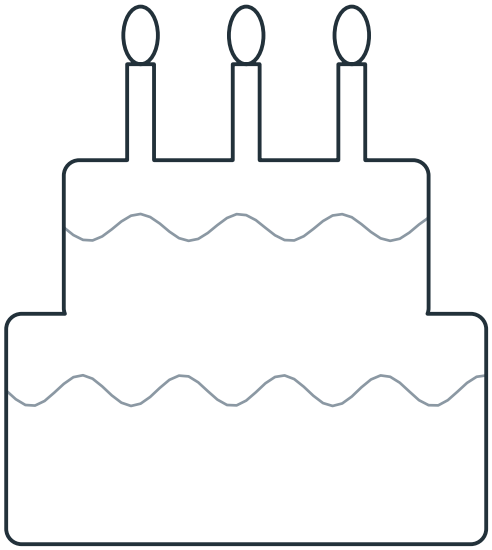
glue a picture on the front of each step

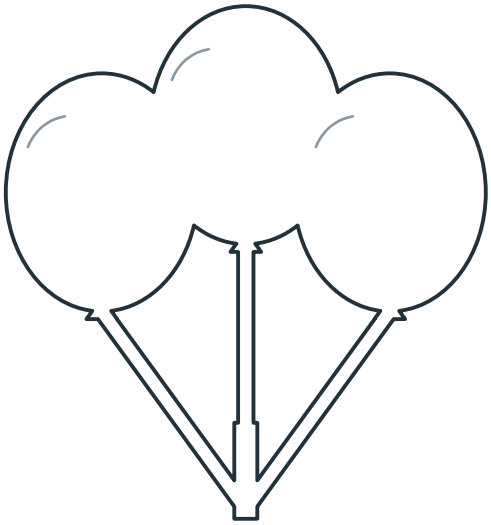


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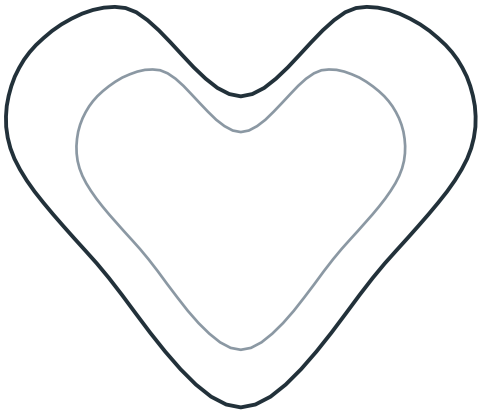
Pop-up pictures

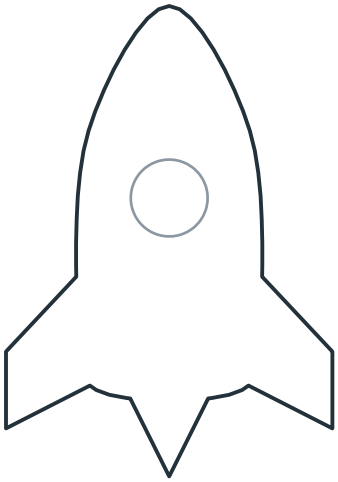
cut
fold

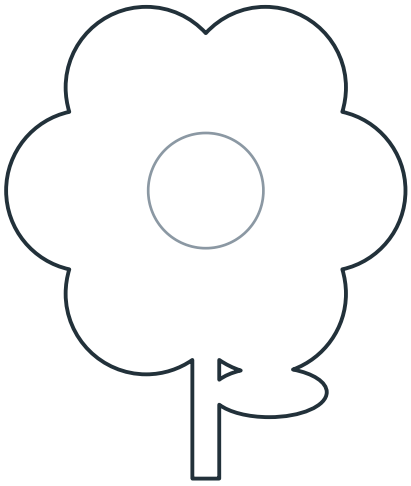












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Pop-up card

Ages 7-12 | 30-40 min | Mess: Low | Card: letter cardstock (65-80 lb). Pictures: copy paper

You need

- Card sheet on cardstock
- Pictures sheet
- Scissors
- Glue stick
- Markers

Skills practiced

- Valley and mountain folds
- Cutting through two layers

LESSON LINK

See how two cuts and a fold turn flat paper into a 3D step.
Grades: 2-6
Ties to: Engineering and design.
Writing: a message for a real reader.

Steps

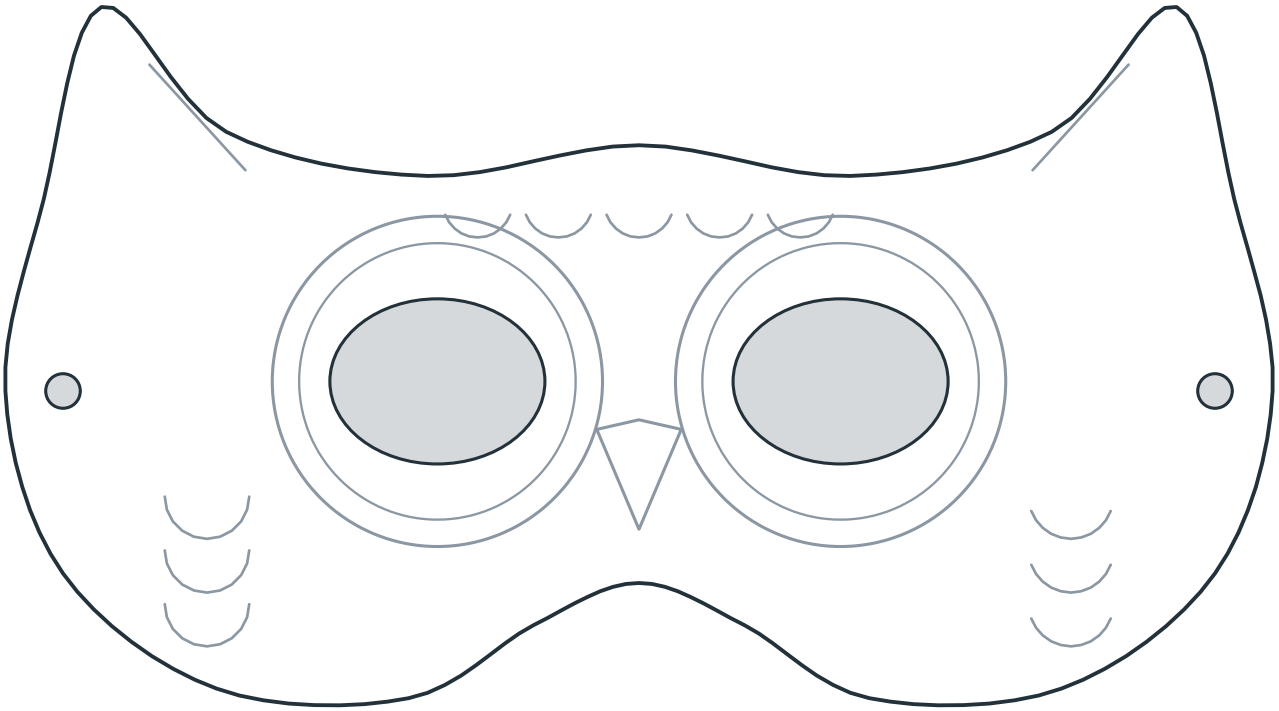
1. Fold the card in half on the long dashed line, printed side inside.
2. Keep it folded and cut the four short black lines, starting at the fold.
3. Fold each little flap forward and back on its dashed line to crease it well.
4. Open the card halfway and push each flap inside so it pops out as a step. Close the card and press.
5. Color a picture, cut it out and glue it to the front of a step. Keep it inside the card's edges.
6. Decorate the outside and write your message.

Tip: Test the pictures before gluing: close the card and make sure nothing sticks out.

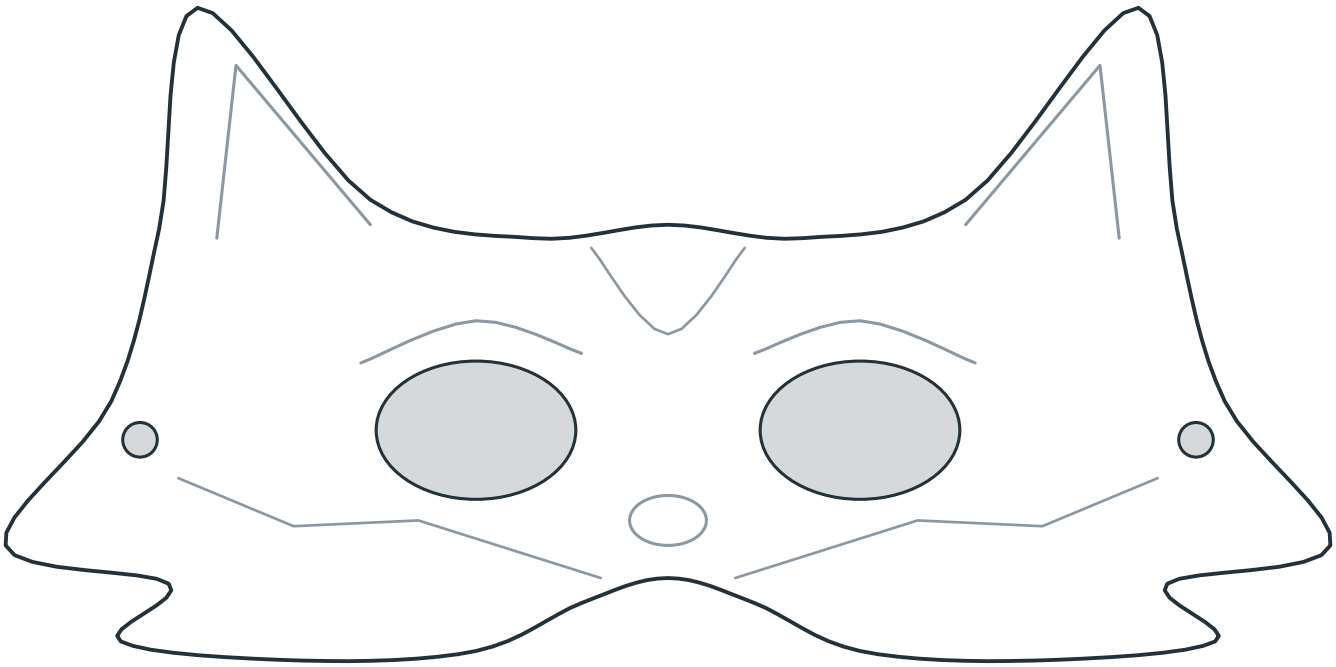
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Owl and fox masks

cut
fold
cut away



OWL



FOX

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Owl and fox masks

Ages 4-10 | 20-30 min | Mess: Low | Cardstock

You need

- Printed masks on cardstock
- Crayons or markers
- Scissors
- Hole punch
- Elastic cord or yarn (or a craft stick and tape)

Skills practiced

- Cutting curves
- Coloring inside lines

LESSON LINK

Act out a story as an owl or a fox.
Grades: PreK-3
Ties to: Literacy: retelling and drama. Science: animals that are active at night.

Steps

1. Color the mask.
2. Cut around the outside line.
3. An adult starts the eye holes: pinch the gray area, snip a small cut, then cut around the oval.
4. Punch the two side holes and tie on elastic or yarn. For little kids, tape a craft stick to one side instead.
5. Hold it up to your face and check that you can see well before you play.

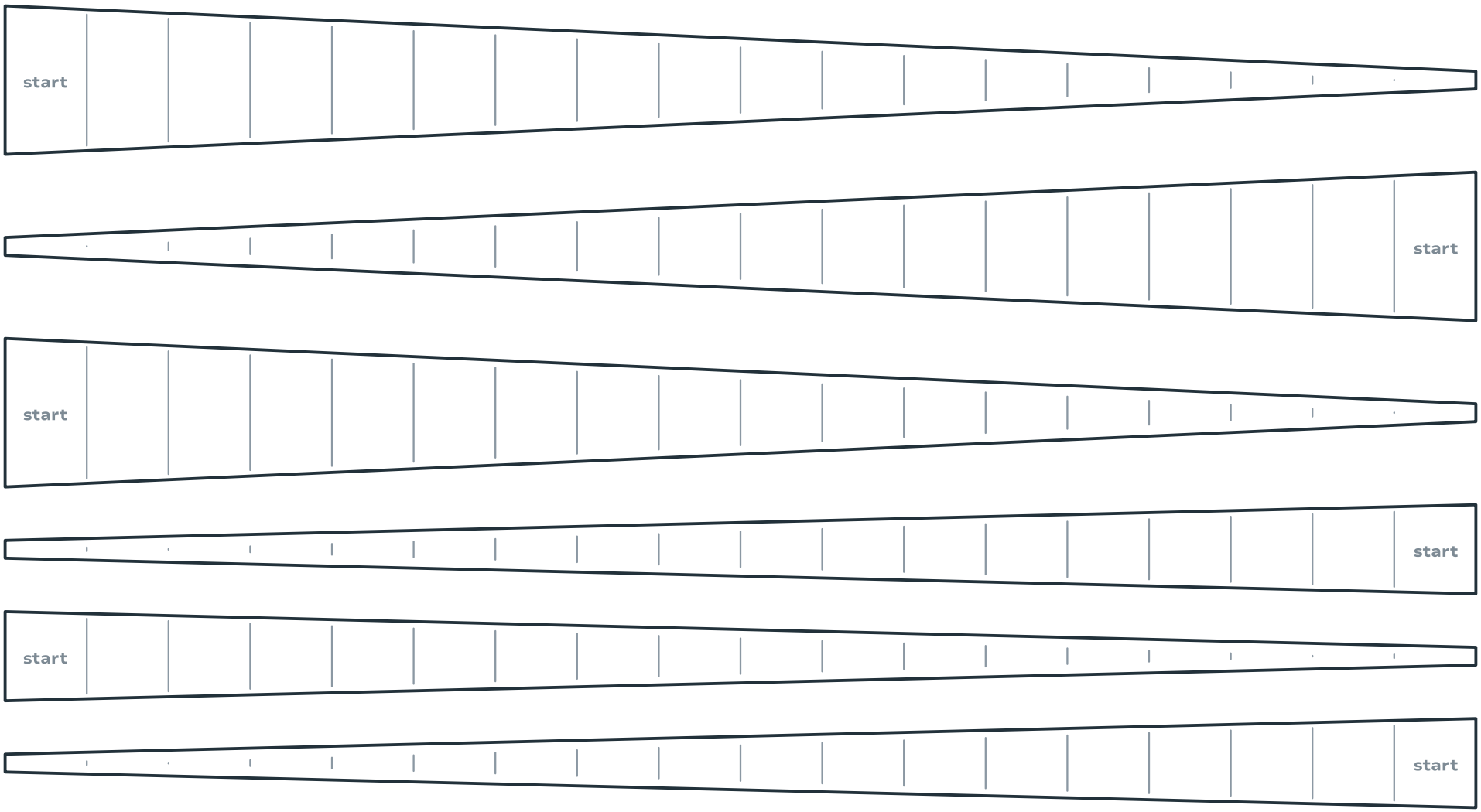
Tip: Great with an owl or fox picture book at storytime. Cut the eye holes ahead of time for groups under 6.

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PROJECT 4 · RECYCLED PAPER BEADS

Paper bead strips

cut
fold



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Recycled paper beads

Ages 8-12 | 30-45 min | Mess: Medium (glue) | Copy paper, magazine pages or old calendars

You need

- Bead strips (or magazine pages)
- Wooden skewer, straw or thin marker
- Glue stick
- String or yarn

Skills practiced

- Rolling tightly
- Measuring and tracing

LESSON LINK

Reuse paper and compare bead shapes: the wide strips make fat beads, the narrow ones thin beads.
Grades: 3-6
Ties to: Earth Day and recycling. Math: measuring length and width.

Steps

1. Color the strips, or trace a strip onto a colorful magazine page.
2. Cut the strips out.
3. Start at the wide end marked 'start' and roll the strip tightly around a skewer or straw.
4. Put glue on the last two inches and finish rolling. Hold for a few seconds.
5. Slide the bead off and let it dry. String your beads.

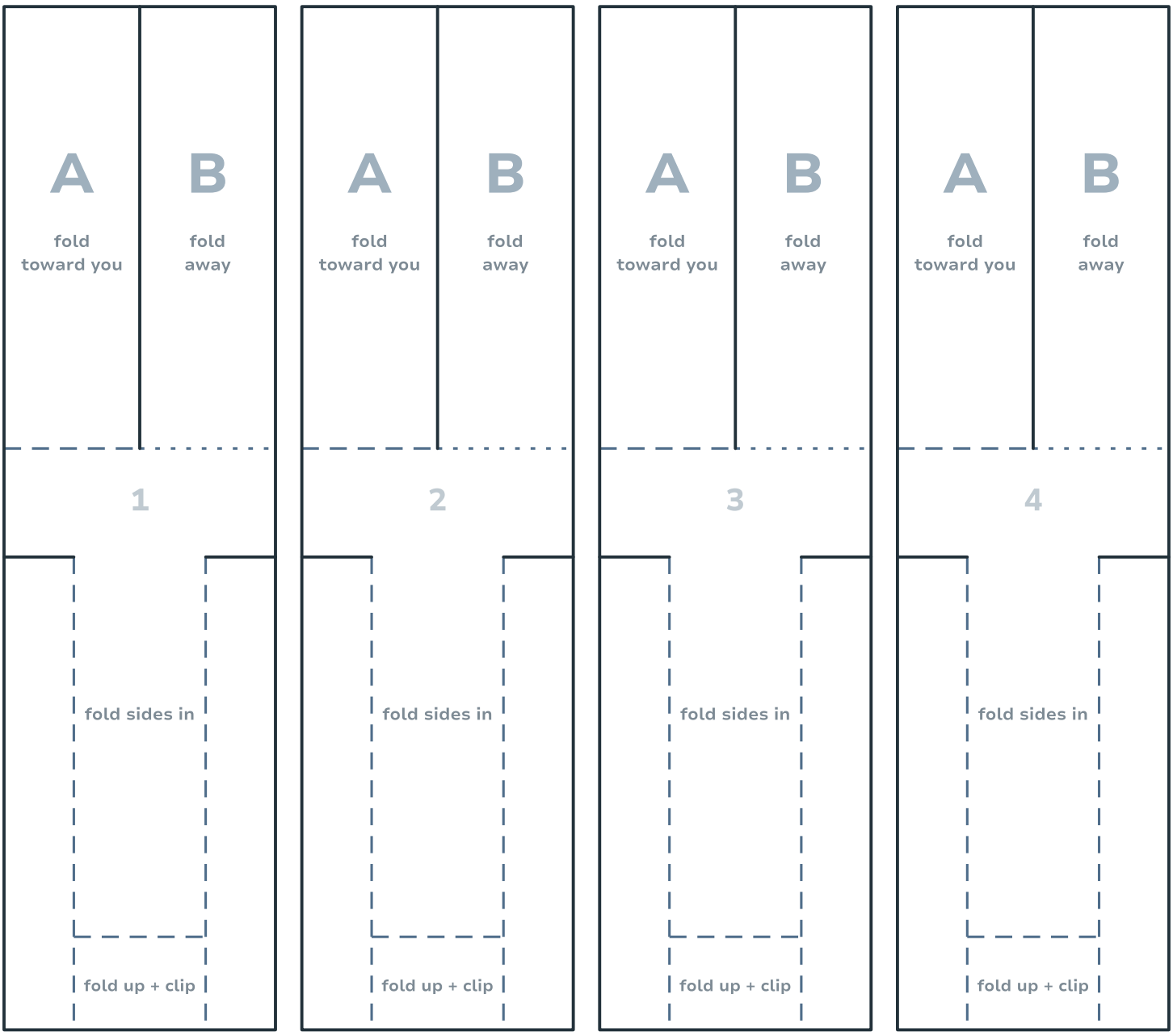
Tip: Use the template as a tracer for magazine pages: the bead shows bits of color from the page.

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PROJECT 5 · PAPER HELICOPTER

Paper helicopter

cut
fold
fold the other way



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Paper helicopter

Ages 6-12 | 15 min, plus testing | Mess: Low | Copy paper

You need

- Printed sheet (4 helicopters)
- Scissors
- Paper clips

Skills practiced

- Following steps in order
- Fair testing

LESSON LINK

Run a fair test: change one thing (rotor length or number of clips) and time the drops.
Grades: 3-5
Ties to: Science: forces and motion (fits NGSS 3-PS2-1).

Source: NGSS 3-PS2-1, https://www.nextgenscience.org/pe/3-ps2-1-motion-and-stability-forces-and-interactions

Steps

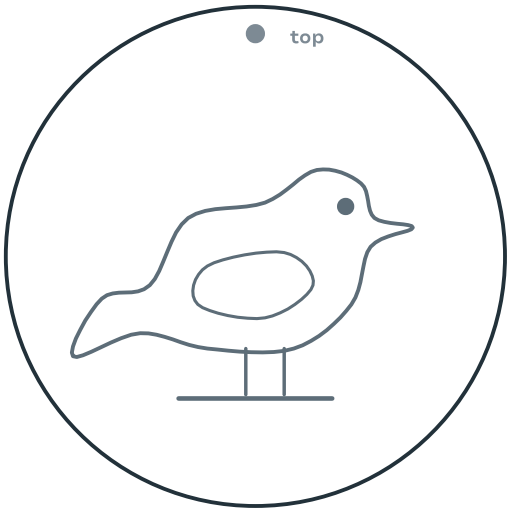
1. Cut out a helicopter on its outside line.
2. Cut down the center line between A and B. Stop at the dashed line.
3. Cut the two short lines on the sides.
4. Fold A toward you and B away from you.
5. Fold the sides in on the dashed lines, then fold the bottom up and hold it with a paper clip.
6. Drop it from up high and watch it spin.

Tip: Drop from the same height every time, three drops each, and take the middle time.

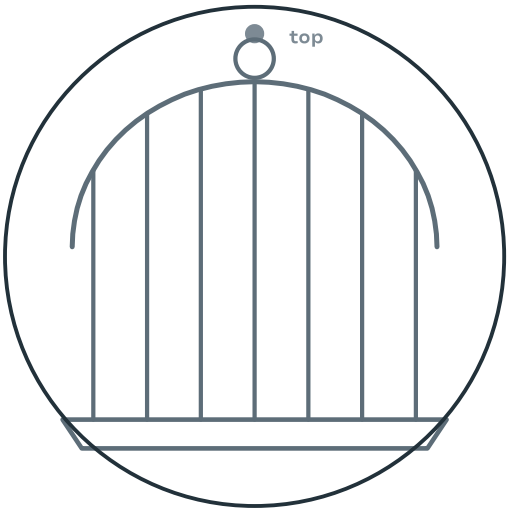
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Thaumatrope spinners

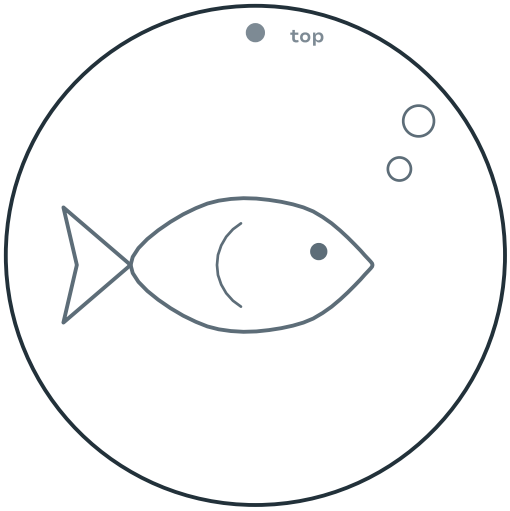
cut
fold



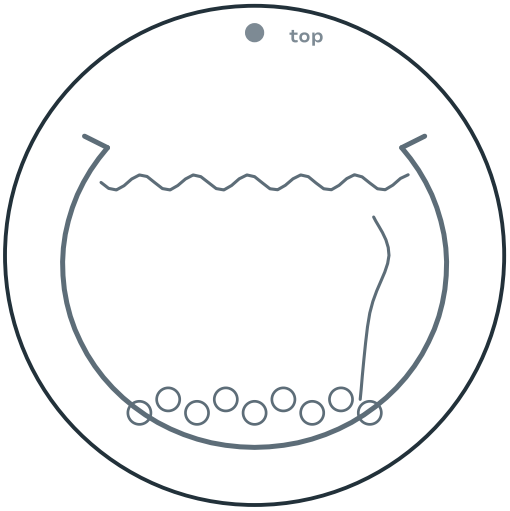
1 · FRONT



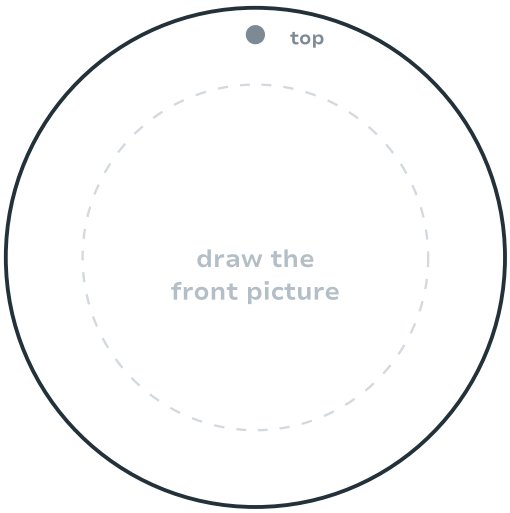
1 · BACK



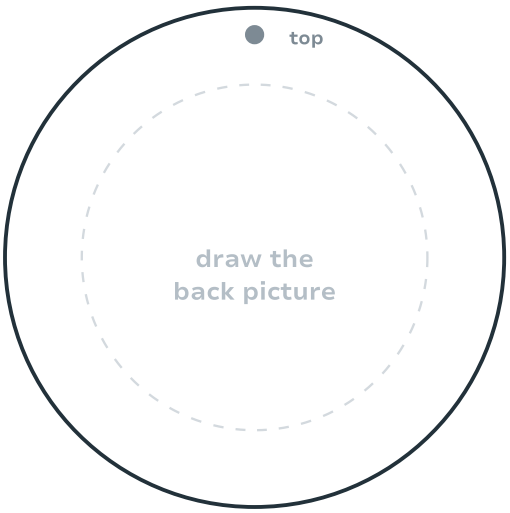
2 · FRONT



2 · BACK



3 · FRONT



3 · BACK

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Thaumatrope spinner

Ages 6-12 | 20 min | Mess: Low | Cardstock

You need

- Printed circles on cardstock
- A straw or pencil
- Tape
- Glue stick
- Crayons

Skills practiced

- Lining up two sides
- Observing

LESSON LINK

Your eyes and brain blend two pictures that swap quickly, the same idea behind animation.

Grades: 2-6

Ties to: Science: light and sight. History: the English doctor John Paris described this toy in 1825.

Source: Kenyon College, Early Scientific Apparatus, https://physics.kenyon.edu/EarlyApparatus/Optical_Recreations/Thaumatropes/Thaumatropes.html

Steps

1. Color a front and back pair (bird and cage, or fish and bowl), or draw your own on the blank pair.
2. Cut out both circles of the pair.
3. Tape a straw or pencil to the back of the FRONT circle, running from the top dot straight down through the middle.
4. Glue the BACK circle on, picture facing out, with both top dots at the top.
5. Roll the straw fast between your hands. The bird goes into the cage.

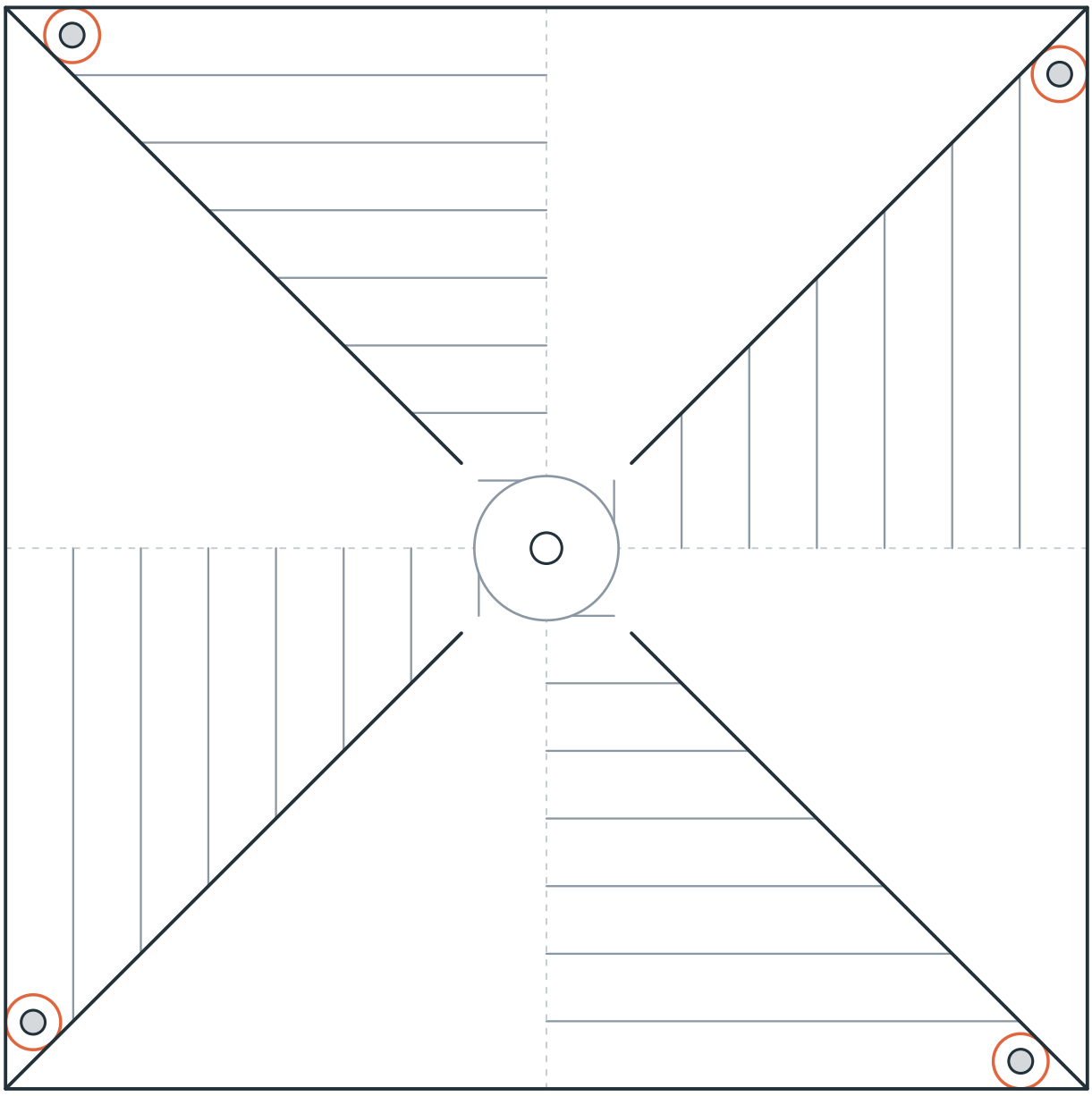
Tip: Ask kids to design a pair where the two halves need each other: a face and a hat, a hive and a bee.

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PROJECT 7 · PINWHEEL

Pinwheel

cut
fold
cut away



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Pinwheel

Ages 6-12 (with help) | 25 min | Mess: Low | Cardstock or two-sided paper

You need

- Printed square
- Scissors
- Hole punch or pushpin (adult)
- Brad (paper fastener)
- Straw or pencil with eraser

Skills practiced

- Cutting to a stop line
- Bending without creasing

LESSON LINK

Moving air pushes the sails, the same push a wind turbine turns into electricity.

Grades: 1-5

Ties to: Science: wind and energy. Earth Day.

Steps

1. Color the striped parts. They become the sails.
2. Cut out the square, then cut each diagonal line from the corner. Stop at the circle.
3. Make a hole at each of the four circled dots and one in the middle.
4. Bend each circled point to the middle, one at a time. Don't crease.
5. Push a brad through all four points and the middle hole, then through a straw. Bend the brad's legs open loosely.
6. Blow on it or carry it into the wind.

Tip: If it won't spin, loosen the brad a little so the pinwheel turns freely on the straw.

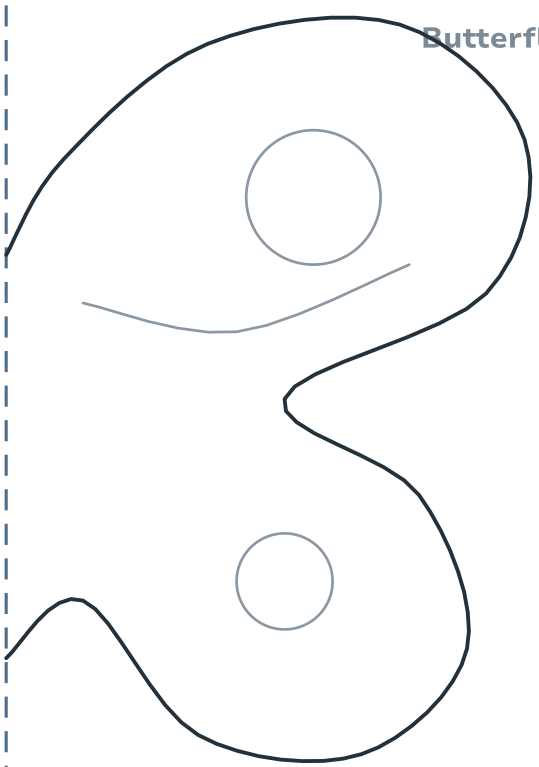
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PROJECT 8 · SYMMETRY FOLD-AND-CUT

Symmetry fold-and-cut shapes

cut
fold

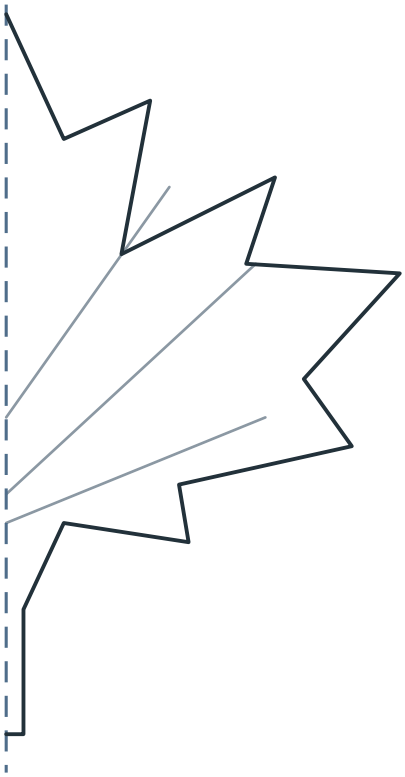
Butterfly



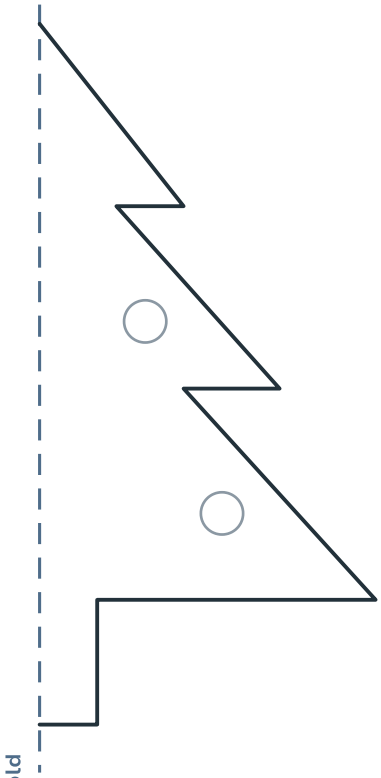
Heart



Leaf



Tree



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Symmetry fold-and-cut

Ages 6-10 | 20 min | Mess: Low | Copy paper

You need

- Printed sheet
- Scissors
- Crayons or markers

Skills practiced

- Folding exactly on a line
- Mirror images

LESSON LINK

Find the line of symmetry and make both halves match.

Grades: 2-4

Ties to: Math: line symmetry (fits Common Core 4.G.A.3). Science: symmetry in leaves and insects.

Source: Common Core 4.G.A.3, https://www.thecorestandards.org/Math/Content/4/G/A/3/

Steps

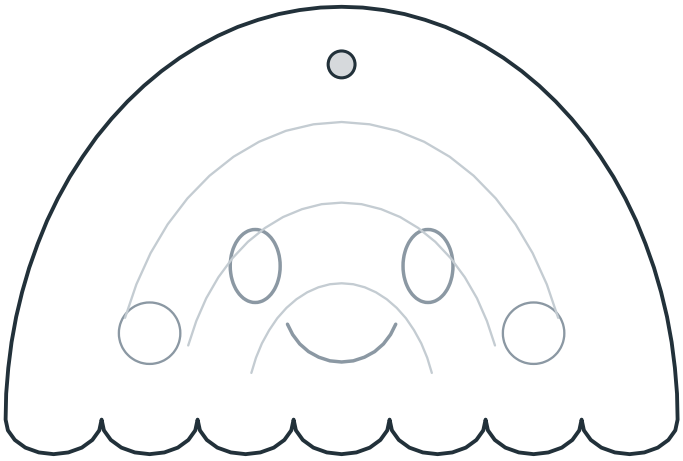
1. Cut the four boxes apart.
2. Fold each box on its dashed line, printed side out.
3. Cut along the black line through both layers. Don't cut the fold.
4. Open it: one shape, two matching halves.
5. Color the blank half so it matches the printed half, like a mirror.

Tip: Go on a symmetry hunt afterward: leaves, faces, letters (A, H, M, T) and windows.

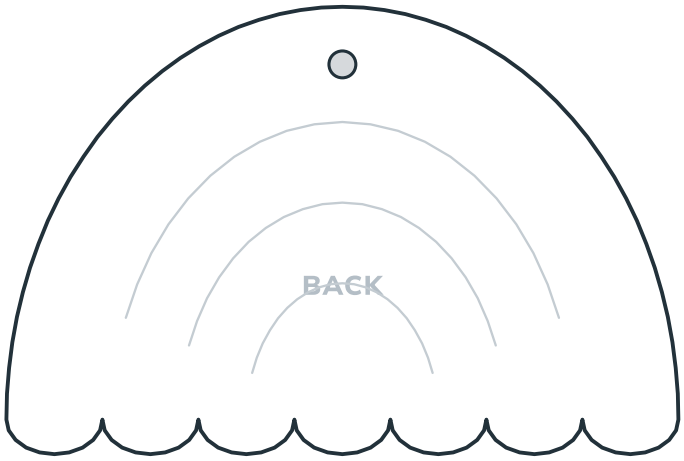
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Paper jellyfish

cut
fold
cut away

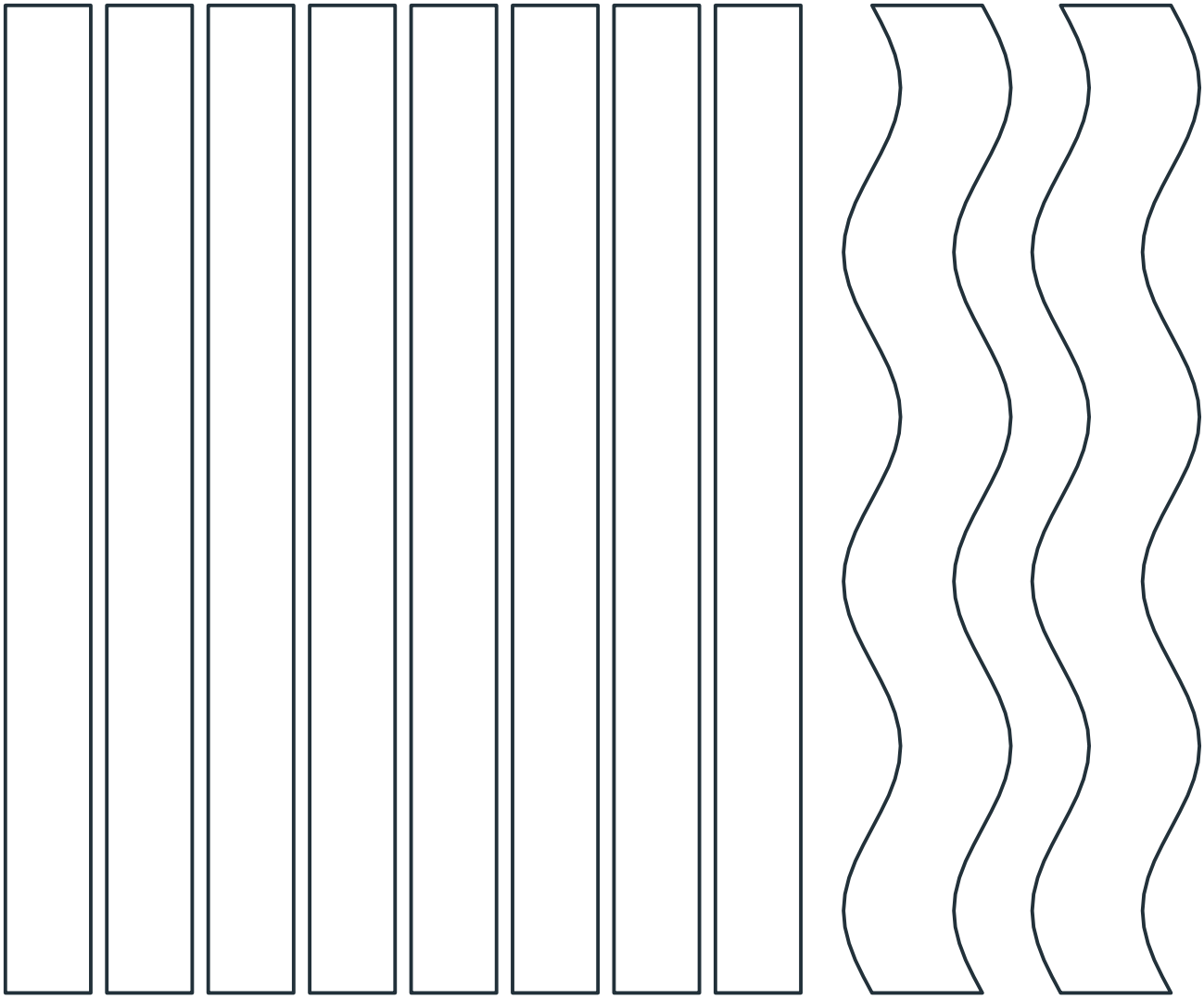


FRONT



BACK

curl these around a pencil



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Paper jellyfish

Ages 5-10 | 30 min | Mess: Medium (glue) | Copy paper or colored paper

You need

- Printed sheet
- Scissors
- Glue stick
- Pencil
- String

Skills practiced

- Cutting long strips
- Curling paper

LESSON LINK

Look closely at a real jellyfish: no bones, a soft bell, long trailing arms.
Grades: K-3
Ties to: Science: ocean animals. Art: texture from curls and waves.

Steps

1. Color the two bell shapes and the strips.
2. Cut out the bells and all the strips.
3. Wrap each straight strip tightly around a pencil, then slide it off so it curls.
4. Glue the tops of the strips along the bottom edge of the FRONT bell, on the back side. Put the wavy arms in the middle.
5. Glue the BACK bell on top to hide the ends. Tie a string through the top hole and hang it.

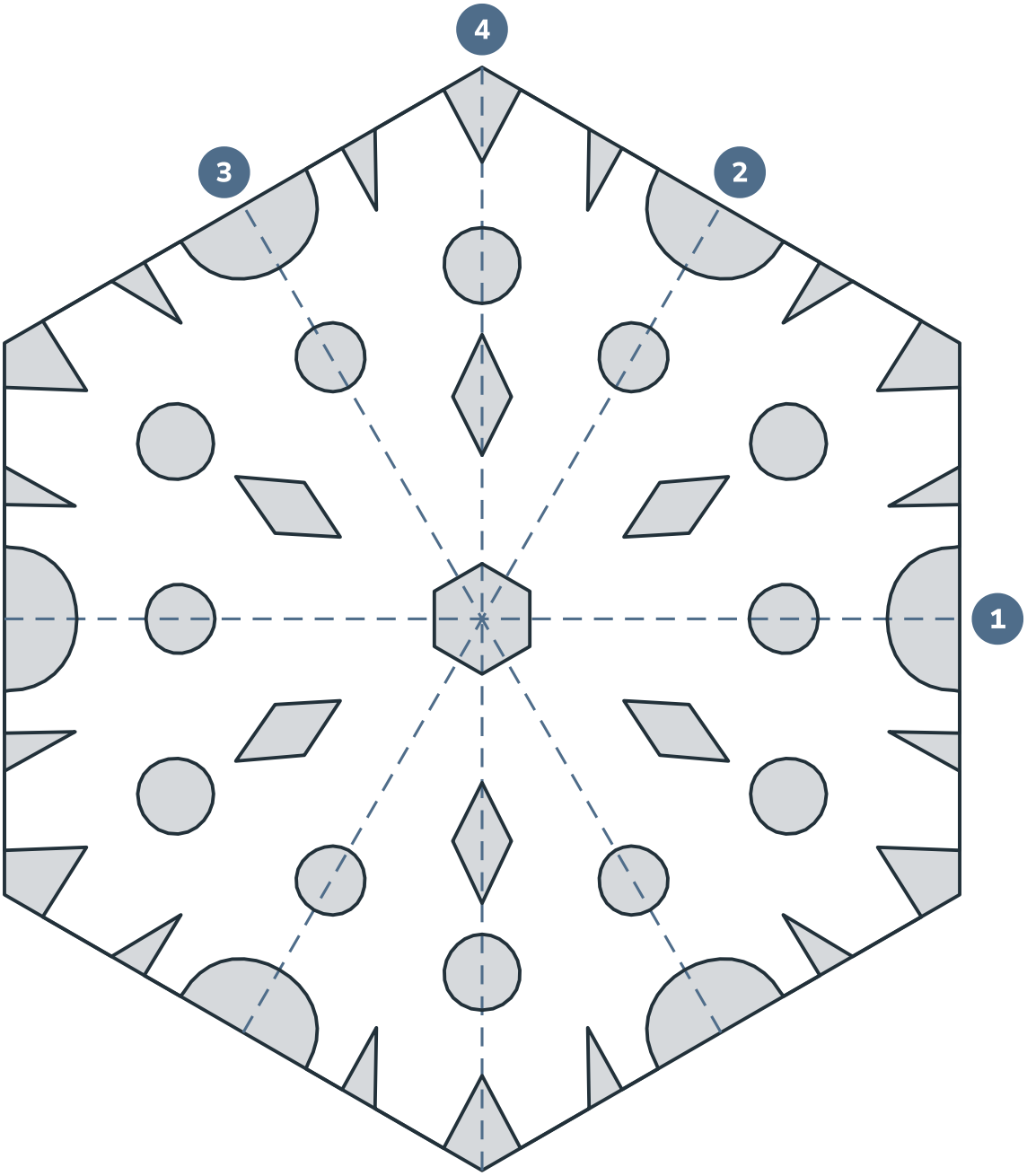
Tip: Hang a whole bloom of jellyfish from the ceiling for an ocean-themed storytime.

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PROJECT 10 · SIX-POINT SNOWFLAKE

Six-point snowflake

cut
fold
cut away



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Six-point snowflake

Ages 8-12 | 20 min | Mess: Low | Thin copy paper

You need

- Printed hexagon on copy paper
- Sharp scissors

Skills practiced

- Precise folding
- Cutting through many layers

LESSON LINK

Real snow crystals have six-fold symmetry, which is why this flake has six points and not eight.

Grades: 3-6

Ties to: Science: water and ice crystals. Math: angles (6 x 60 degrees = 360).

Source: SnowCrystals.com (Caltech physicist Kenneth Libbrecht), https://www.snowcrystals.com/

Steps

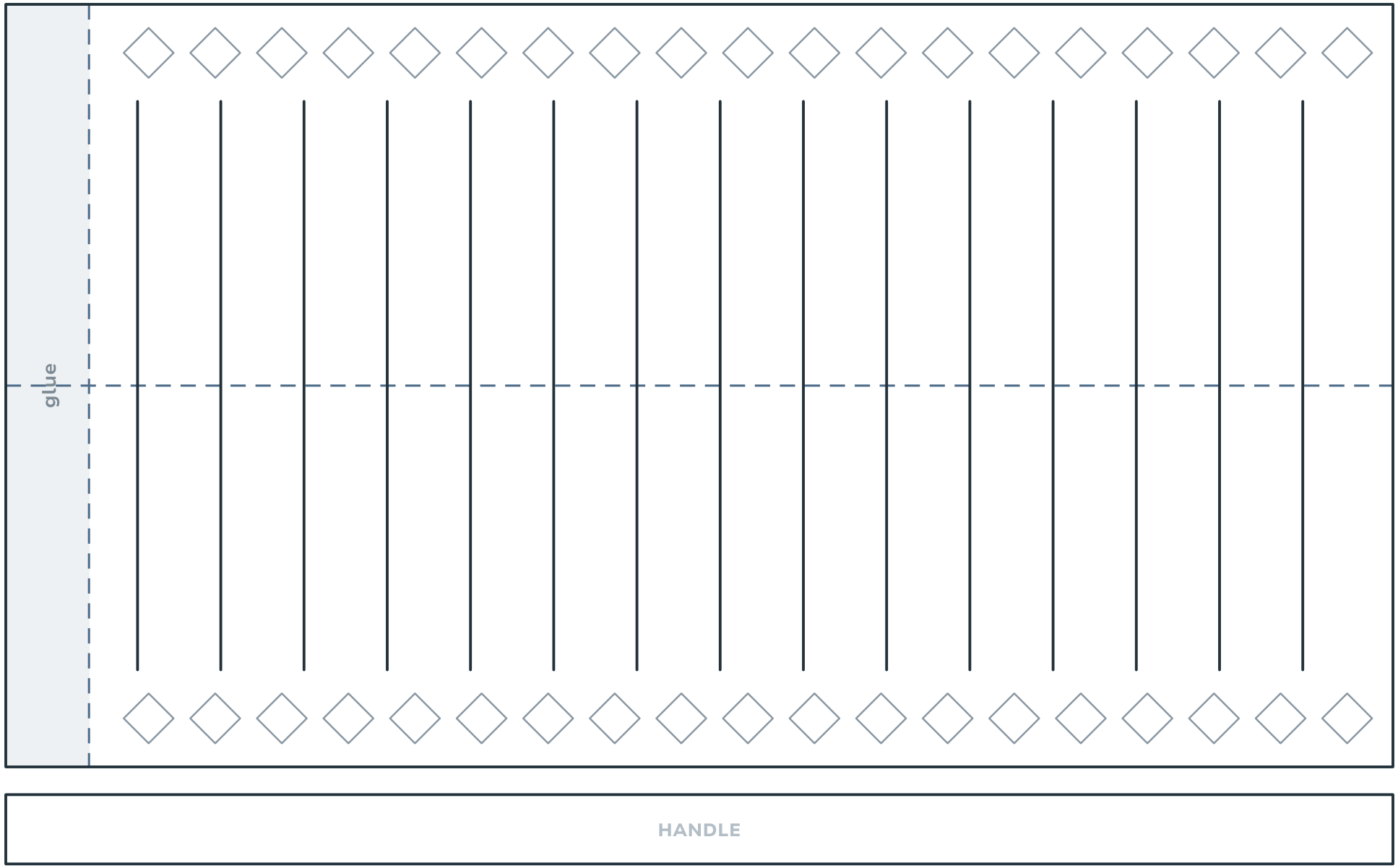
1. Cut out the hexagon on its outside line.
2. Fold on line 1 with the printed side out. Keep the printing on the outside for every fold.
3. Fold on lines 2 and 3 into thirds, like a fan: one third forward, one third back.
4. Fold in half on line 4. You now have a thin wedge.
5. Cut away the gray parts you can see, through all the layers.
6. Unfold slowly and press it flat under a book.

Tip: Twelve layers is a lot of paper: thin copy paper works much better than construction paper.

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Paper lantern

cut
fold



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Paper lantern for the Lantern Festival

Ages 6-12 | 25 min | Mess: Low | Red or yellow paper, printed landscape

You need

- Printed sheet
- Scissors
- Glue stick or tape
- Markers

Skills practiced

- Cutting from a fold to a stop line
- Rolling a cylinder

LESSON LINK

The Lantern Festival falls on the 15th day of the first lunar month and ends the Lunar New Year celebrations.
Grades: 1-6
Ties to: Social studies: holidays and traditions. Math: equal spacing.

Source: USC U.S.-China Institute, https://china.usc.edu/event/lantern-festival-2012

Steps

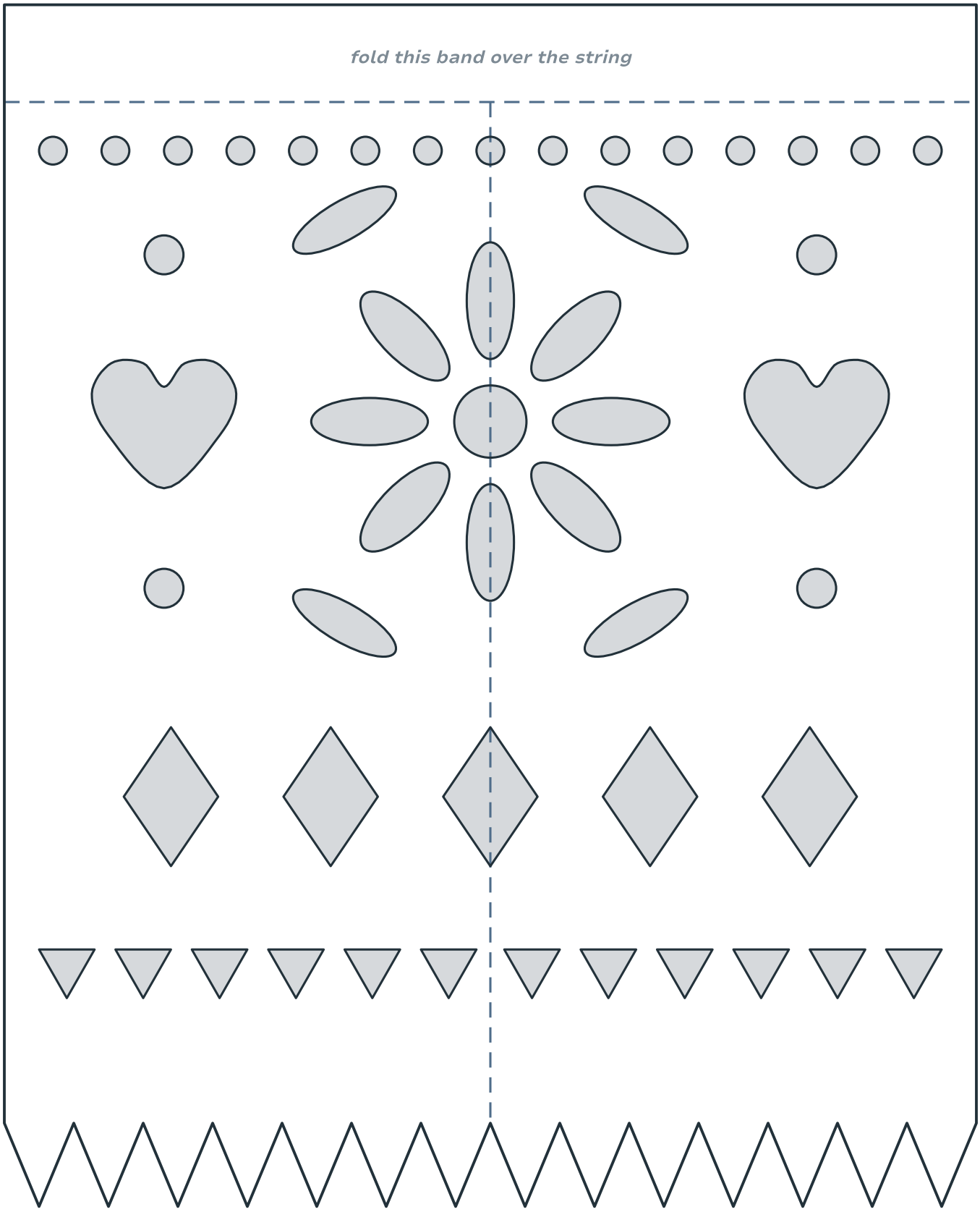
1. Color the patterned bands at the top and bottom.
2. Cut out the big rectangle and the handle strip.
3. Fold the rectangle in half the long way on the dashed line, printing outside.
4. Starting at the fold, cut along each black line. Stop when you reach the patterned band.
5. Unfold, roll it into a tube and glue the gray strip under the other end.
6. Press down gently so the middle puffs out. Glue the handle inside the top.

Tip: Some families write riddles on paper strips and hang them on lanterns. Try tying riddles to yours.

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Papel picado banner

cut
fold
cut away



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Papel picado banner

Ages 8-12 | 25 min | Mess: Low | Copy paper, or tissue paper clipped over the printed template

You need

- Printed template
- Small sharp scissors
- String
- Glue stick or tape

Skills practiced

- Cutting shapes on a fold
- Planning symmetric designs

LESSON LINK

Papel picado ('punched paper') is a Mexican folk art. Artisans stack dozens of sheets of tissue paper and punch designs with a chisel, for Día de los Muertos and other celebrations.
Grades: 3-6
Ties to: Social studies: Mexican folk art and Día de los Muertos. Math: symmetry.

Source: Mexic-Arte Museum lesson, Arte Para Todos, https://mexic-artemuseum.org/wp-content/uploads/2020/10/Papel-Picado-Slideshow.pdf

Steps

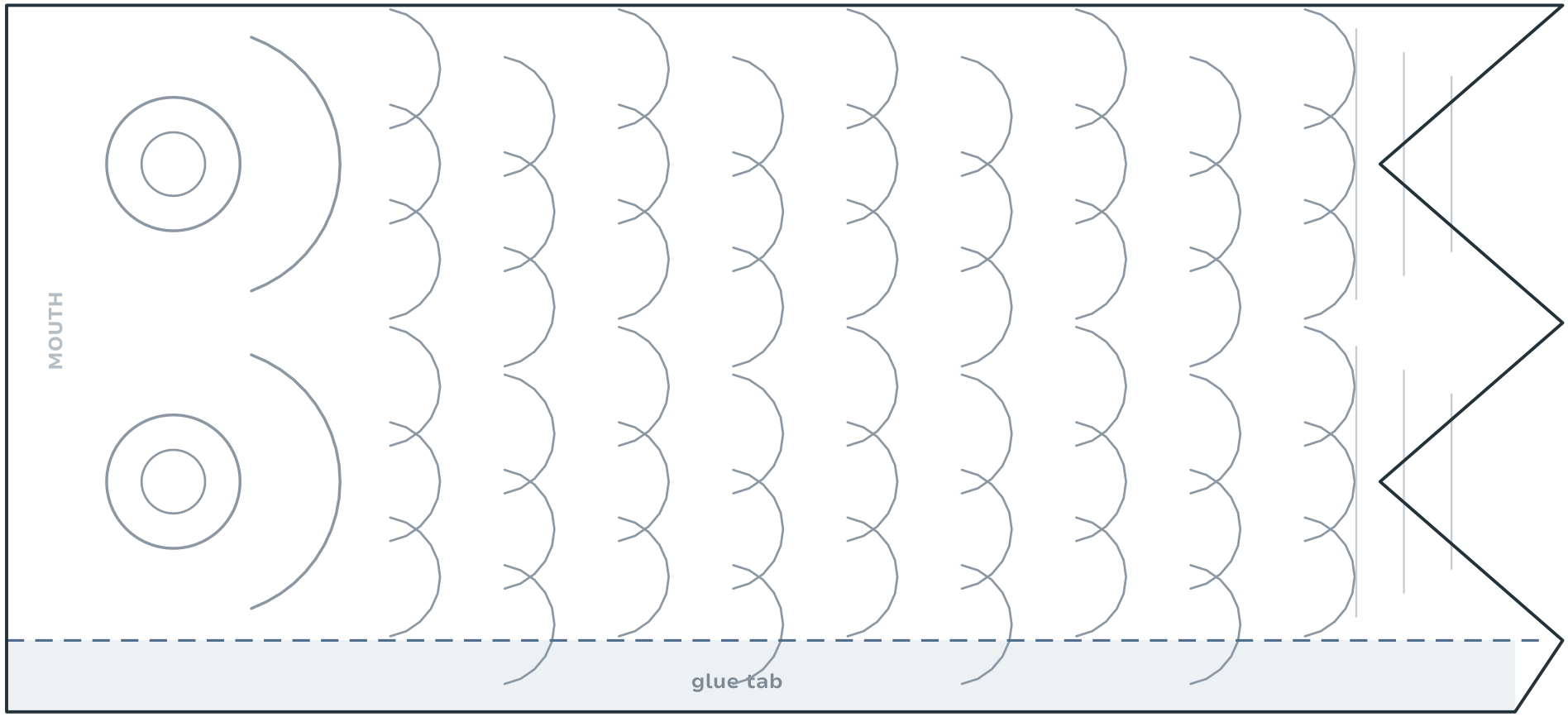
1. Cut around the outside line, including the zigzag bottom.
2. Fold the top band back on its dashed line.
3. Fold the sheet in half on the center dashed line, printed side out.
4. Cut out the gray shapes through both layers. For shapes on the fold, cut half a shape from the folded edge. For the others, pinch the middle and snip to start.
5. Open it up. Make a few, then fold each top band over a string and glue it down.

Tip: Tissue paper is closest to the real thing. Fold it in half, clip it over the template, and cut through both.

Families, schools, libraries and groups may print, copy, cut and share these templates. Please don't sell them.

Koinobori carp streamer

cut
fold







fins (optional)

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Koinobori carp streamer

Ages 6-12 | 30 min | Mess: Medium (glue) | Copy paper, printed landscape

You need

- Printed sheet
- Scissors
- Glue stick
- Hole punch
- String

Skills practiced

- Rolling a tube
- Decorating both sides

LESSON LINK

On Children's Day in Japan (May 5), families fly koinobori, carp streamers made of cloth. The carp stands for strength.

Grades: 1-5

Ties to: Social studies: holidays around the world.

Source: MIT Japan Program (JPNET), https://web.mit.edu/JPNET/holidays/May/kodomonohi.shtml

Steps

1. Color the scales, eyes and tail. The top half is one side of the fish and the bottom half is the other.
2. Cut out the body, the mouth ring and the fins.
3. Roll the body into a tube, printing outside, and glue the top edge onto the gray glue tab.
4. Curl the mouth ring into a circle and glue it inside the mouth to keep it round.
5. Glue on the fins if you like. Punch two holes near the mouth, tie on a string and let it catch the breeze.

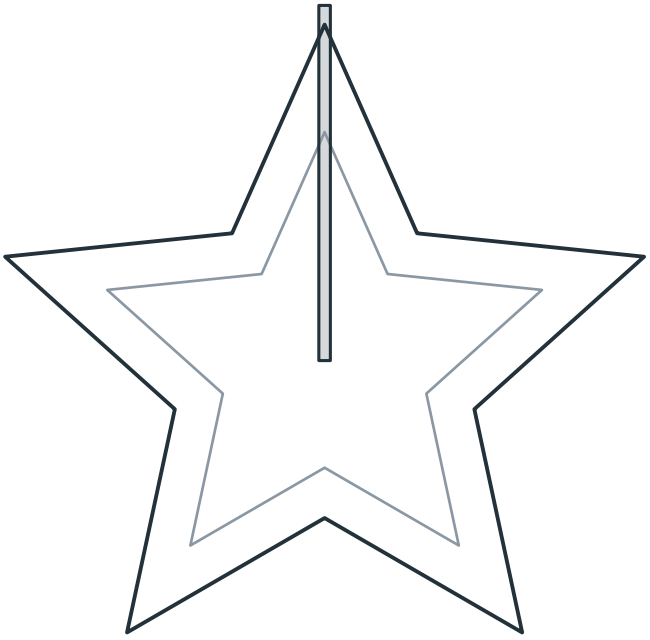
Tip: Make a family of carp in different colors and hang them one above the other on a stick.

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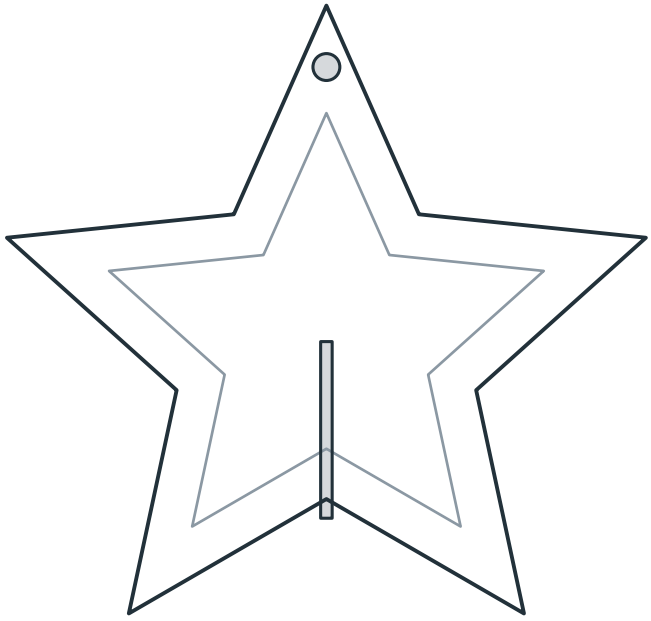
PROJECT 14 · 3D STAR ORNAMENT

3D star ornament

cut
fold
cut away



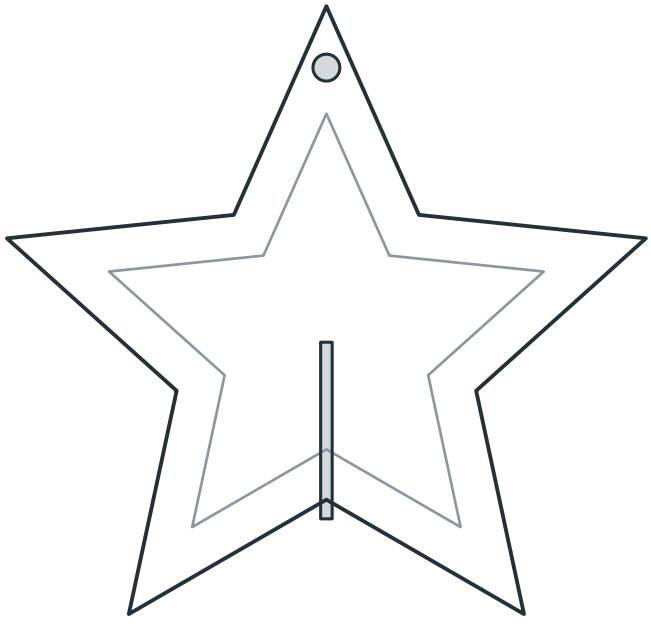
A



B



A



B

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3D star ornament

Ages 7-12 | 15 min | Mess: Low | Cardstock

You need

- Printed stars on cardstock
- Scissors
- String or ribbon
- Markers

Skills practiced

- Cutting thin slots
- Turning 2D into 3D

LESSON LINK

Two flat shapes make one solid shape: look at it from above and find the right angles.

Grades: 2-5

Ties to: Math: 2D and 3D shapes, right angles.

Steps

1. Color both sides of each star if you like.
2. Cut out star A and star B.
3. Cut out the thin gray slot in each star.
4. Slide A's slot down over B's slot until the centers line up. The stars sit at right angles.
5. Thread string through the hole at the top of B and hang it.

Tip: On copy paper a single cut works for the slot; on cardstock cut a thin sliver so the stars slide together.

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