



Projects and Crafts

Build, design, and create with projects and crafts
that use everyday materials.

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Revise Your Size

Make a paper strip as tall as you are. Repeat in a few months.
Are you getting taller?

1 Make a height strip

An adult cuts a strip of paper as tall as you are.

2 Decorate

Personalize your height strip.

Each strip needs a name and a date.

3 Revise your size

Save your height strip. Make another one in a few months.
Tack the strips on the wall, so the bottoms are lined up with
the floor. Then compare:



Easy. Which strip goes up to the top of your head? Which one just goes up to your eyes?

Medium. Do you think you grew? Why or why not?

Hard. Why do we need to line up the bottom of the strips to compare them?

Materials

Per height strip

adding machine tape or
wrapping paper cut into
a strip a few inches wide
and at least 4 feet long

To share

art supplies or stickers for
decorating strips

For an adult

scissors



Variations

Height museum (Hard). Try this with a group of 4-6. Line up your height strips in order, from shortest to tallest. Post them on the wall to make a height museum.

Half as high (Hard). Fold your strip in half so it is half your height. Then, find things in the room that are half your height.

Levels: Easy, Medium (Hard)

Group size: 1 per project

Strawberries and Blueberries

Do you have more strawberries or more blueberries?
Compare handfuls to find out.

Materials

Per project

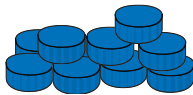
construction paper
marker or crayon

To share

bowl of "strawberries"
(red pompoms or plastic
bottle caps), sized so that
a child can hold 2-4 in
one hand

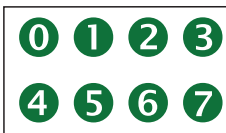


bowl of "blueberries"
(similar objects in blue)



glue stick

number stickers (optional)



1 Trace

Trace your hand on construction paper.

2 Reach for the red

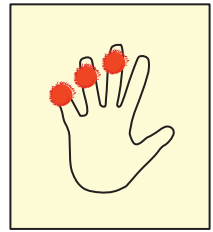
Grab a handful of strawberries.

Put each strawberry on a finger you traced.



Easy: How many fingers have a strawberry?

Medium: Do you have more fingers or more strawberries?



3 Add the blue

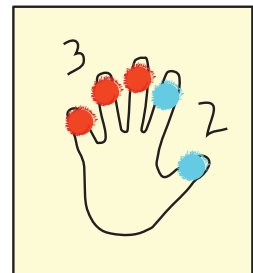
Take a blueberry for each empty finger. If you don't have any empty fingers, don't take any blueberries.

4 Glue them down

Glue your strawberries and blueberries.

(Optional) Count your strawberries and blueberries.

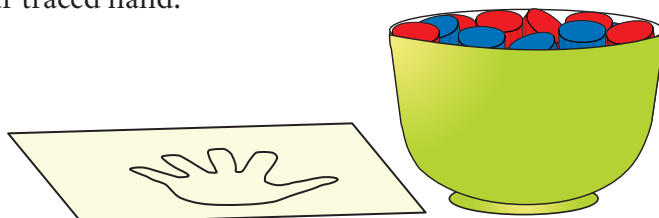
Write the numbers on your paper or use number stickers.



Variations

Shut your eyes and take five (Medium).
Mix the strawberries and blueberries in one bowl. Shut your eyes, and count out five objects from the bowl. Then, arrange them on your traced hand.

Make it ten (Hard). Trace two hands. Take a handful of strawberries and match them with fingers. Then, take the rest in blue.



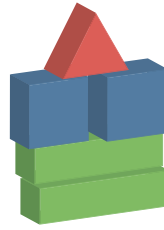
Soaring Towers

Stack blocks to build the highest tower you can. Then try to go even higher!

1 Build

Use some or all of your blocks to build the highest tower you can.

Your tower must stay up on its own.



How did you make your tower stable, so it doesn't fall over?

What shapes are in your tower?

How many blue blocks in your tower?

What would happen if you put a sphere on top?

Materials

Per tower

varied blocks or small boxes

Easy. 4–6

Medium. 7–10

Hard. 11–15

2 How high does it go?

Compare the tower to something nearby.



Does your tower go up to your knees? Does it go up to the top of the table?

3 Rebuild

Try again and see if you can build a higher tower. Use the same blocks or trade one of your blocks with someone else.



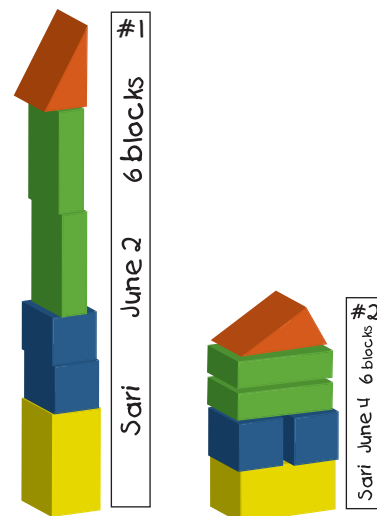
What if you turn the block long side up? Would that make your tower higher?

Your last tower was about as high as the chair. Is this one higher than the chair?



Variation

Towers over time (Hard). Cut a paper strip to the height of each tower you build. On each strip, write your name, the date, and the number of blocks you used in the tower. Did the highest tower use the most objects?



Levels: Easy, Medium, Hard

Group size: 1 per book

Picture Book

Make and share a counting book.

Materials

Per book

several sheets of construction paper, folded in half and stapled to make a book

To share

markers, stickers
number stickers (optional)



1 Decide how high you'll count

Easy. Start at 1 and count to 4.

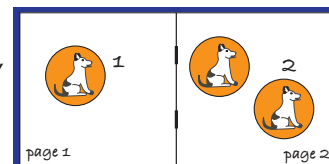
Medium. Start at 1 and count to 6.

Hard. Start at 1 and count to 12.

2 Choose a theme



Should we use puppy stickers or kitten stickers?



3 Put it on paper

Match a number of puppy stickers to the count: one on the first page, two on the second, and so on.



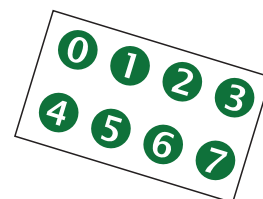
*What comes after two?
Show me with your fingers.
Let's count three puppy stickers.*

4 Number it (optional)

Use a number sticker or write a number on each page to show how many.



How many stickers on this page? Which sticker shows a '3'?



5 Read your book

Count the objects out loud as you show each page of your book.

Variations

Tell a story (Easy, Medium, Hard).
Make up a story to go along with your book.

Different ways to count (Hard). Count by 1¢ up to 10¢, start at 0 and count by 2s up to 10, or count back from 10 to 1.

Dimes and pennies (Hard). Start at 10¢ and count up by pennies.

*I saw one puppy.
Another one ran over
and there were two!*



Fill It Up

Fill up a cup with pompoms. Challenge others to find how many are inside.

1 Fill It Up

Count out objects to fill a cup. Keep the total a secret!

I'm going to fill this cup with three pompoms.



You counted three pompoms. If you count them again will you get three?

2 Trade cups

Estimate how many are inside.



Do you think there are any in the middle of the cup that you can't see?

3 Count

Take the objects out of the cup. Count to check your estimate.

Materials

Per project

clear plastic cup

To share

bowl of pompoms or other objects in different colors for filling cups

Easy. Objects sized so 3-4 fill the cup.

Medium. Objects sized so 5-6 fill the cup.

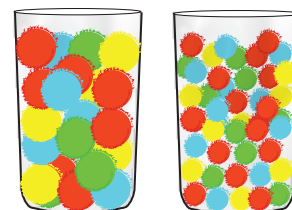
Hard. Objects sized so 10-12 fill the cup.

Variations

Change the shape (Hard). You'll need two clear plastic containers. Each container should be a different shape. Fill each with identical objects. Predict: Which has more inside? Why do you think so? Count to check.



Change the size (Hard). You'll need two clear plastic cups and objects that come in two sizes (e.g., large and small pompoms.) Fill each cup. Predict: Which cup has more inside? Why do you think so? Count to check.



Levels: Easy, Medium, Hard

Group size: 1–2 per city

Cityscape

Building with boxes? Make a city and trace your cityscape.

Before beginning (Optional)

Materials

Per city

10–20 varied boxes or blocks

tape, markers, several sheets of newsprint (optional)

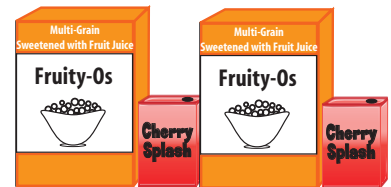


Clear off a section of a wall. Tape newsprint along the wall.

1 Build

Use your boxes and blocks to make a city.

Easy. Build in a pattern: tall building, short building, tall, short ...



Medium. Build smaller to larger: each building is taller than the one before it.

Hard. Build by the numbers: 3 tall buildings, 3 short buildings, 3 tall, 3 short ...

If you will be tracing your city, build against the newsprint on the wall.



*If you turn the box sideways, is it taller or shorter?
How many sides does the box have?*

2 Give a city tour

Tell about your cityscape.



*Which parts are short? Which are tall?
Which box is last?*

3 Trace and draw (optional)

Trace your city outline on newsprint. Remove the newsprint from the wall, and draw in the buildings.

Variations

Who lives there? (Easy, Medium). Find toy animals the right size to live in the buildings in your city.

Try it outside (Easy, Medium, Hard). Build your city along the sidewalk. Trace your city outline with chalk.

Toyscape (Easy, Medium). Line up a set of toy vehicles, people, or animals in order from shortest to tallest. Or, arrange them in a pattern based on height.

Watch Me Grow

How does your garden grow? Plant seeds and track how they grow over time.

Before beginning

Plant seeds or seedlings.

1 Draw (optional)

Look carefully at your plant each week. Draw what you see in your plant book.

2 Measure

Measure your plant with a straw each week. Line up a straw against the plant.

An adult helps cut the straw to the height of the plant. Tape the straw to graph paper, and mark the date.

Make sure to water your plant each week.



Materials

Per plant

seeds or seedling that grows quickly (e.g., grass, beans, avocado pit)

potting soil and a pot

a few straws

piece of graph paper

several sheets of blank paper, folded and stapled to make a book (optional)

To share

tape and crayons or markers

For an adult

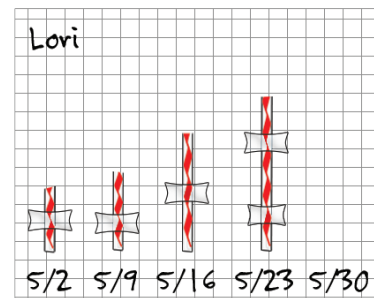
scissors



Easy. How many leaves on your plant? Did it have the same number last week?

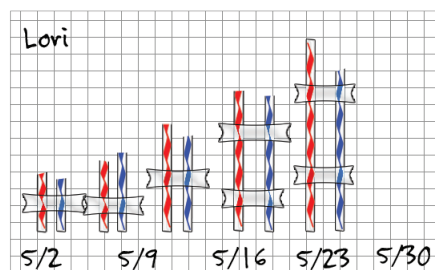
Medium. How did your plant change this week? Is it taller?

Hard. Does your plant grow about the same amount each week? How can you tell?



Variations

Pair up the plants (Hard). Grow two plants. Mark the pots so you can tell them apart. Record their growth on the same chart, using two different color straws. Are both plants the same height each week?



Change the conditions (Hard). Put one plant in the sun and one in the shade. Do they both grow the same amount?

Level: Medium (Hard)

Group size: 1 per mask

Make a Mask

Fold, draw, and cut. Then, unfold to see your mask!

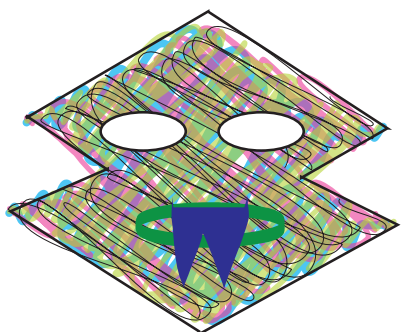
Materials

Per mask

piece of construction
paper
marker
scissors
string

To share

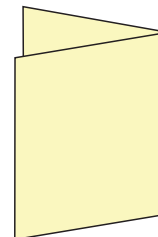
crayons or markers



1 Fold

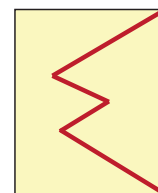
Fold a piece of paper in half.

Place it so that the fold is on the right.



2 Draw

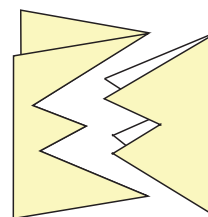
Draw a shape that starts near the top of the fold and ends near the bottom.



3 Cut

Cut along the lines you drew.

Don't unfold the paper yet!



4 Predict



What will you get when you unfold the paper? How many points will be at the side?

5 One, two three ... unfold!



Does it look like you predicted?

Decorate your mask.

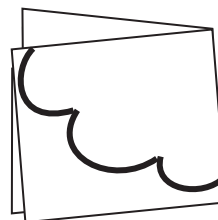
An adult helps cut out eye holes, punch holes, and put in string so you can wear your mask.

Variations

Start from the whole (Hard). Use folded paper to make a heart, tree, or other shape that is the same on both sides. Plan in advance so that when you cut and unfold, you get the shape you want.



Quarter it (Hard). Fold the paper in half and in half again. Draw an outline of one quarter of a flower, snowflake, or design. Predict what you'll see when you cut along the line you drew. Then, cut and unfold.



Chain Challenges

Making paper chain decorations? Use them to measure.

1 Link up!

Make a chain with your links.

2 How long is your chain?



Find something the same size as your chain.

Does your chain fit across the chair? Does it go up to your knees?



3 Predict



Easy. *If we tape two chains together, how long will the big chain be? Show me with your arms.*

Medium. *If we tape four chains together, will they go up to your waist?*

Hard. *If we tape ten chains together, will they be as tall as you?*

4 Tape your chains together and test your predictions

Materials

Per chain

strips of colored paper about 1" wide and 8" long:

Easy. 5

Medium. 10

Hard. 15

glue stick

To share

one or two rolls of tape



Variations

Pattern party (Easy, Medium, Hard).

Alternate two link colors or use your links to make a different pattern.

Made to measure (Medium, Hard). Make a chain of a certain size: as long as your foot, as tall as you are, or the length of the room.

Double trouble (Hard). If you use links twice as long, how long will your chain be? Try it and see!

Trail of tens (Hard). Everyone makes a chain of 10 links. Each person uses a different color. Tape them together and count by 10s to find out how many chain links in all.

Levels: Easy, Medium, Hard

Group size: 1–2 per tower

Towering Toothpicks

Select, connect, and build a tower that is tall and strong!

Materials

Per tower

about 100 grapes,
gumdrops, or stale
mini-marshmallows
(more if you're eating
while building)

about 200 toothpicks

Medium. Small
potato

Hard. Large
potato

1 Explore

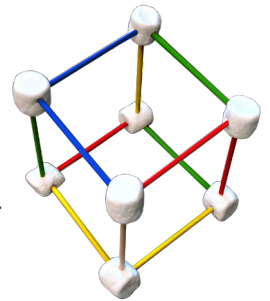
Use your materials to experiment.



*Do you have any triangles
in your tower?*

*How many squares can
you find in your tower?*

*How could you make your
tower taller?*



2 Build, test, and revise

Use the materials to build ...

Easy. ... the tallest tower you can.

Medium. ... a tower that holds up a small potato.

Hard. ... a tower that holds up a large potato.



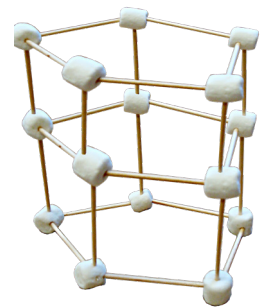
*How can you make your tower stronger?
What shapes hold together well?*

3 Show and tell (optional)

Demonstrate your project.

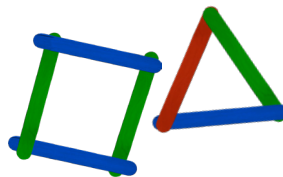


*What shapes did you use?
How did you make your
tower strong?*



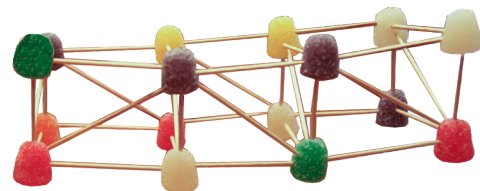
Variations

Build big (Easy). Use
craft sticks and large
marshmallows. Try to
build the tallest tower
you can.



Try it with 20 (Hard). Make the tallest
tower you can with 20 toothpicks and 10
gumdrops. If several people are building
towers, compare sizes and shapes.

Build a bridge (Hard). Use toothpicks to
build a bridge that a toy car can ride under
or over.



Make It Morse

String up your first initial in a necklace using Morse code.

1 Make it in Morse code

Make your first initial in Morse code. Use round beads for the dots and long, thin beads for dashes. String up the beads.



2 Morse code show and tell



How many round beads did you use? How many long ones? How many in all? Which of us used the most beads?

3 Make a necklace

Knot your string and wear your necklace!

Materials

Per necklace

several beads, long and thin in one color

several beads, small and round in a different color

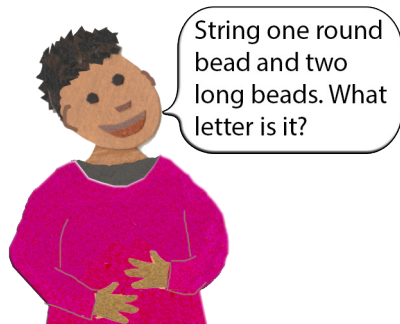
string or lace for beading

Morse Code Chart (p. 45)



Variations

Make it for me (Hard). Work with a partner. Give your partner step-by-step directions for making a Morse code chain with your first initial. Then, switch roles so your partner gives you directions.



Morse code mix-up (Hard). Three or four people with different first initials put their chains out, mix them up, and take one. Don't take your own. If you can figure out the letter on the chain, return it to the owner. Otherwise, ask the owner to claim it.

Name it (Hard). String up your first name or your initials in Morse code.



Morse Code Chart

A	→	• —
B	→	— • • •
C	→	— • — •
D	→	— • •
E	→	•
F	→	• • — •
G	→	— — •
H	→	• • • •
I	→	• •
J	→	• — — —
K	→	— • —
L	→	• — • •
M	→	— —

N	→	— •
O	→	— — —
P	→	• — — •
Q	→	— — • —
R	→	• — •
S	→	• • •
T	→	—
U	→	• • —
V	→	• • • —
W	→	• — —
X	→	— • • —
Y	→	— • — —
Z	→	— — • •

Hands on the Wall

Make a quilt of handprints to hang on the wall.

1 Share out the quilt pieces



We have six quilt pieces and three people. If we share out the quilt pieces, how many does each person get? Are there any extras?

Divide up the quilt pieces, and put any extras aside for now.

2 Dip in

Dip your hand in a paint tray, and make a handprint on each of your quilt pieces.

3 Decorate any extra quilt pieces (optional)

If you have any left over, decorate them together. You will use them in the quilt, too.

4 Lay out the quilt pieces

Lay the cardboard on the floor or a table. Work together to arrange the quilt pieces to cover the cardboard.



*How many quilt pieces fit across?
How many fit down?
Are the quilt pieces the same size all around?*

5 Glue

Once your quilt pieces are in place on the cardboard, glue them down.

Hang up your quilt when the glue is dry.

Materials

Per quilt

piece of 18" x 24"
cardboard or newsprint

tempera paint in a few
colors, each in a tray for
dipping hands

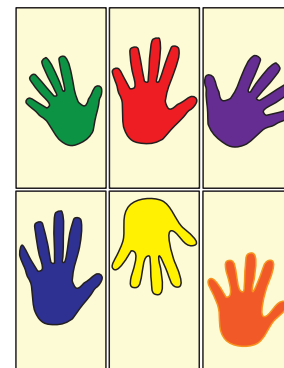
glue stick

"quilt pieces" (rectangles
made from light-colored
construction paper):

Easy. 4 rectangles
(9" x 12")

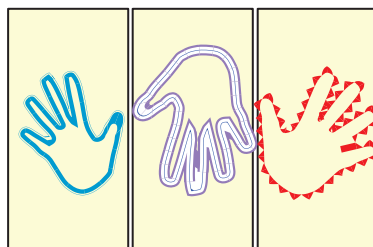
Medium. 6 rectangles
(6" x 12")

Hard. 9 rectangles
(6" x 8")



Variations

Trace and decorate (Easy, Medium, Hard).
Instead of dipping your hand in paint, trace it,
and then decorate the outline of your hand.



Giant size (Hard). Use a 24" x 36" piece of
cardboard or newsprint and eighteen 6" x 9"
rectangles.

Levels: Easy (Medium, Hard)

Group size: 2 per pattern

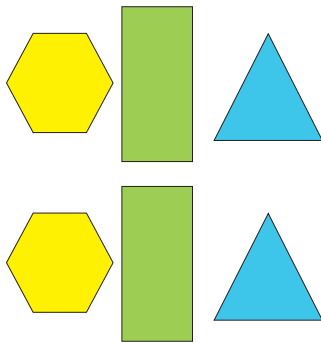
Copy Cat

I'll make a pattern. Copy it if you can!

Materials

Per 4 patterns

blank shapes (pp. 61-67)
glue stick
plain white paper

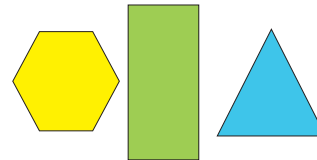


1 Start the pattern

One person chooses three shapes to start.



*What shapes did you pick?
What colors are they?*



Glue them down in a row.

2 Copy

The other person repeats the pattern.



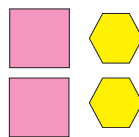
What shapes will you use? Which one goes first? Which goes second?

3 Switch roles

Repeat steps 1-2. This time, the person who copied starts the pattern, and the other person copies.

Variations

Copy two (Easy). Repeat two shapes instead of three.



Include orientation (Hard). Use different orientations for the shapes in your pattern.



Pattern path (Easy, Medium, Hard).

Instead of gluing your pattern on paper, tack it to the wall or on the floor to form a path from one part of the room to another. If you have wooden or plastic shapes, you can use those in place of paper shapes.

Copy color and shape (Hard). An adult photocopies blank shapes (pp. 69-70) three times: each on a different color paper. Use color *and* shape to make your patterns.



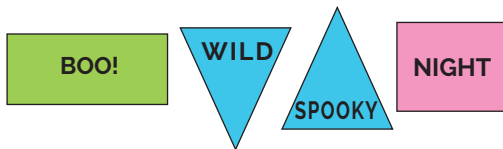
Outdoor trail (Easy, Medium, Hard). Make a pattern path on the sidewalk by tracing shapes with chalk.

Say It with Shapes

Make pattern poems with shapes and words.

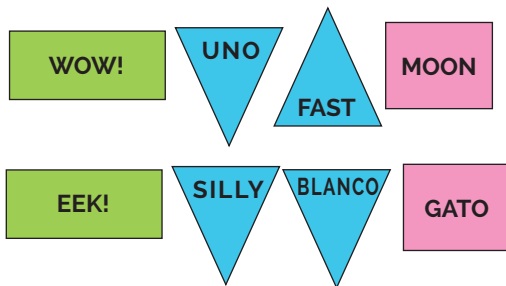
1 Create the first line

Choose 3-4 words to use for your first line. Place them on plain white paper.



What is your poem about?
What shapes are you using?

2 Continue the pattern: same shapes, different words



Repeat the shape pattern at least twice to make a poem.

3 Edit and glue

When you are satisfied with your poem, glue it down on paper.

4 Share your poem



What shape comes after the rectangle in your poem?
What is the color pattern in your poem?
What is the shape pattern?

Materials

Per 4 pattern poems

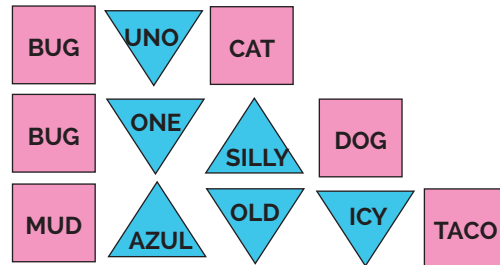
one word set (pp. 51-55)
glue stick
plain white paper



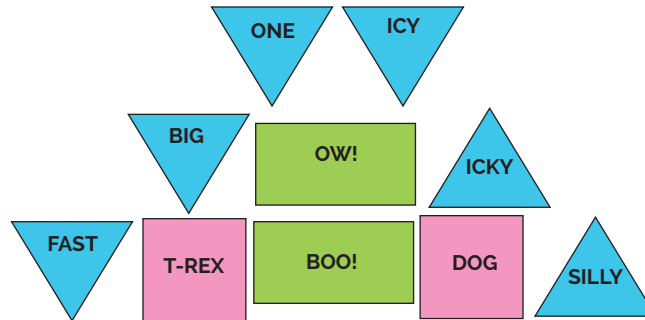
Say It with Shapes (cont'd)

Variations

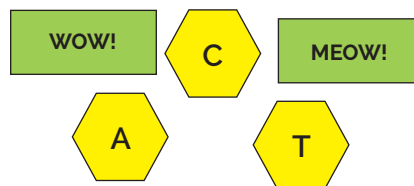
Grow a poem (Hard). Make a pattern that "grows" each line. The poem could grow by adding a shape each line.



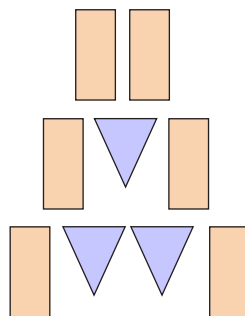
Or, the poem could grow symmetrically:



Letter it (Medium). Combine letters (pp. 57-59) and words (pp. 51-55) to make a visual poem.



Shape and color patterns (Easy, Medium, Hard). Use blank shapes (pp. 61-70) to make a pattern.



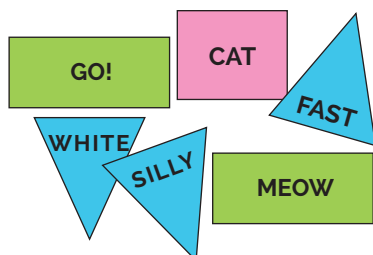
Picture Poems

Make a picture with shapes and words.

1 Decide on a theme



What will your poem be about?



Materials

Per 4 picture poems

one word set (p. 51-55)
glue sticks
plain white paper

2 Make a picture

Choose words that fit your theme and arrange them in a picture or a design.

3 Share your poem

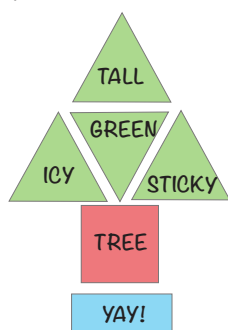


How many squares did you use in your picture?

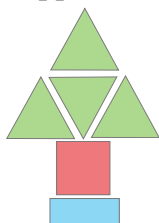
What shape is above the rectangle?

Variations

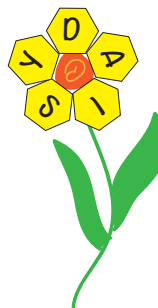
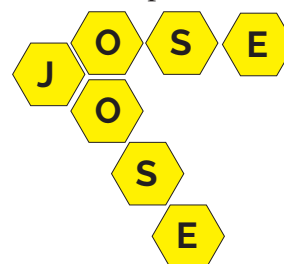
Holiday cards (Hard). Use words and an image to fit the season.



Shape pictures (Easy, Medium, Hard). Combine blank shapes (pp. 61-69) to make a picture.



Letter it (Medium, Hard). Make a pattern or picture with letters (p. 57-59) in your name.



Or, combine shapes, letters, stickers, and drawing.

Nouns

CAT

T-REX

TACO

DOG

MUD

TRUCK

BUG

SUN

NIGHT

GATO

MOON

DAY

✂ Cut out along lines. Find more shapes on pp. 111-133.

Exclamations

EEK!

GO!

OOPS!

OH!

MEOW!

WOOF!

YIKES!

WHEE!

BOO!

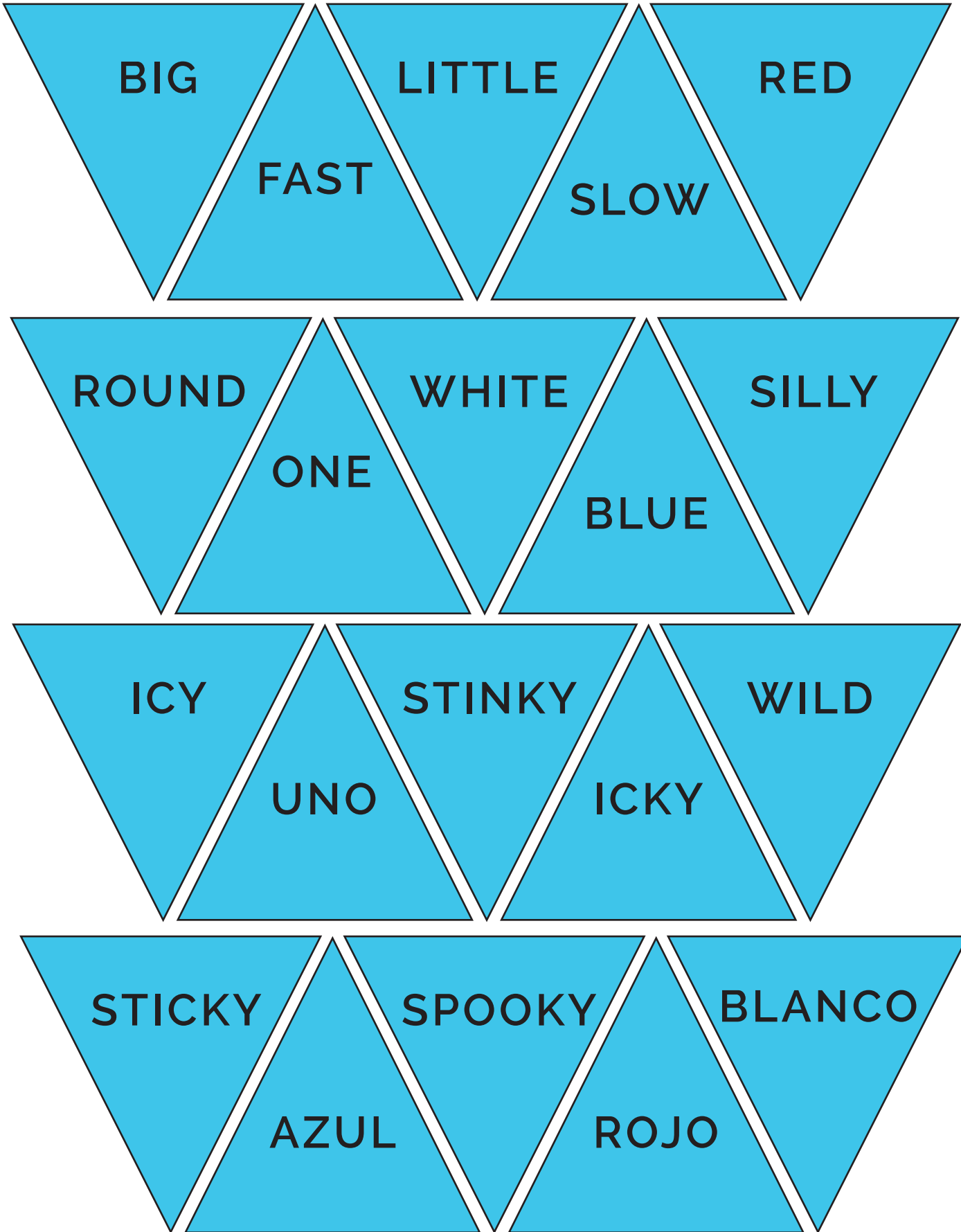
YUM!

¡SÍ!

¡BRAVO!

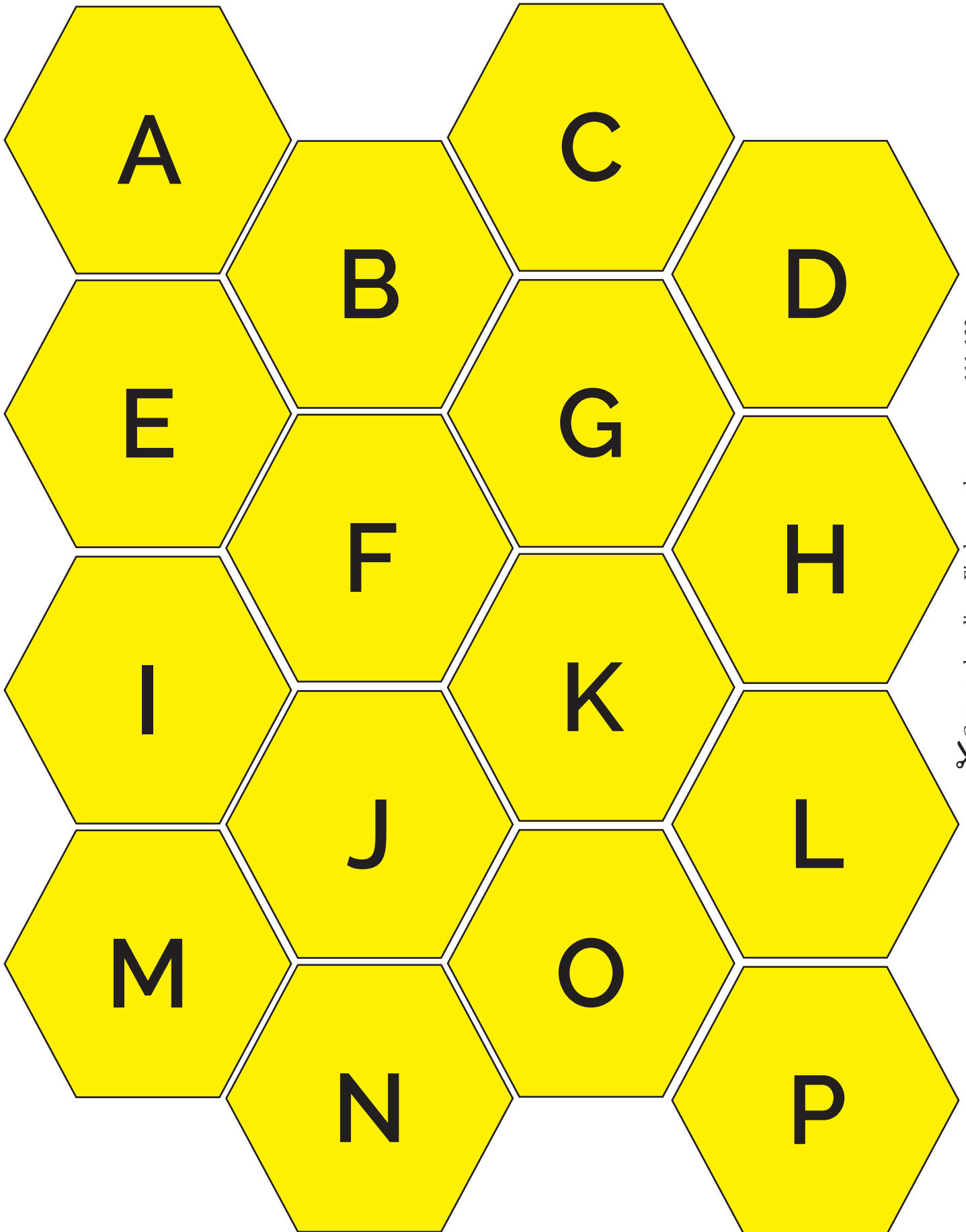
✂ Cut out along lines. Find more shapes on pp. 111-133.

Adjectives



✂ Cut out along lines. Find more shapes on pp. 111-133.

Letters

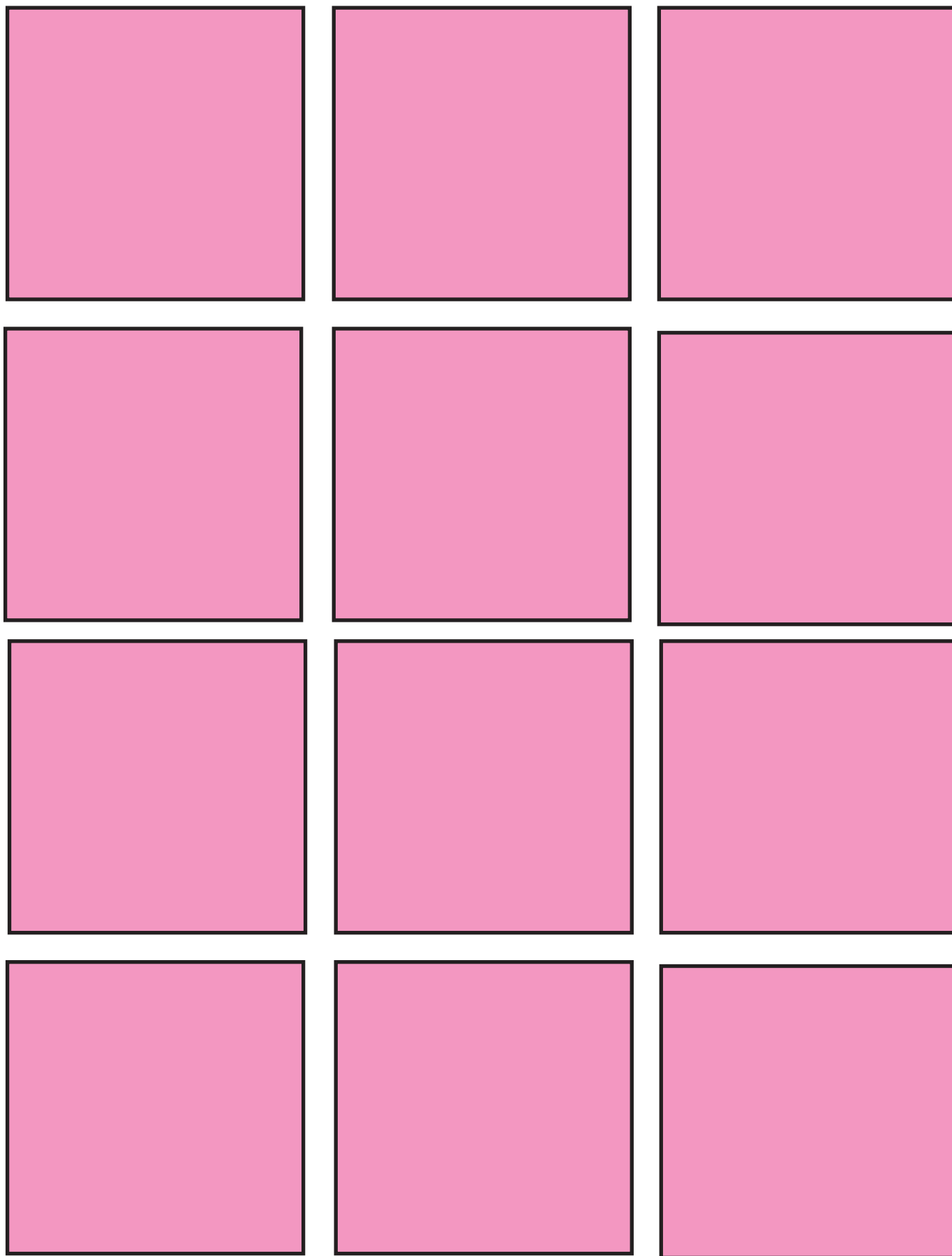


✂ Cut out along lines. Find more shapes on pp. 111-133.



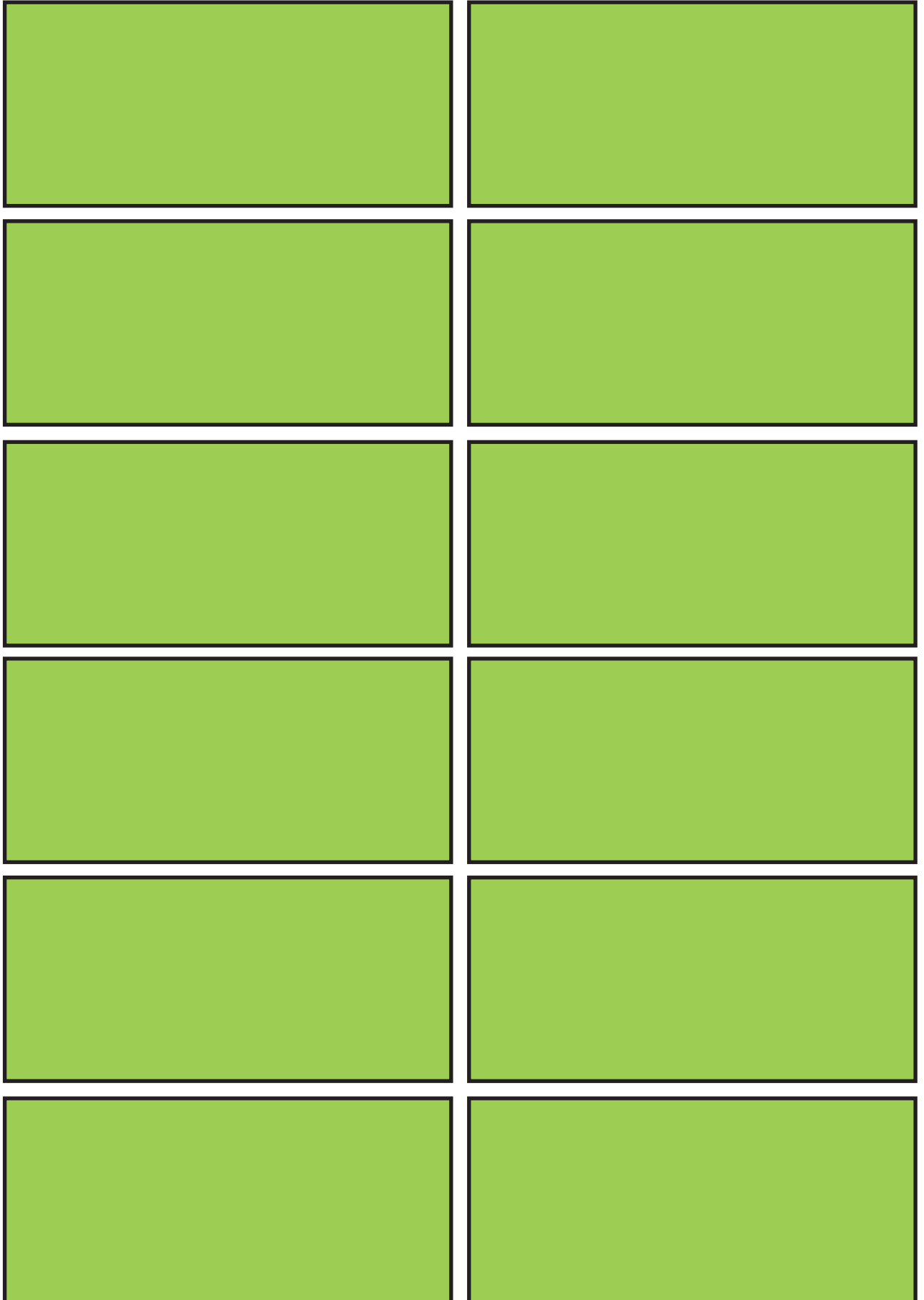
✂ Cut out along lines. Find more shapes on pp. 111-133.

Squares—blank or fill in with nouns



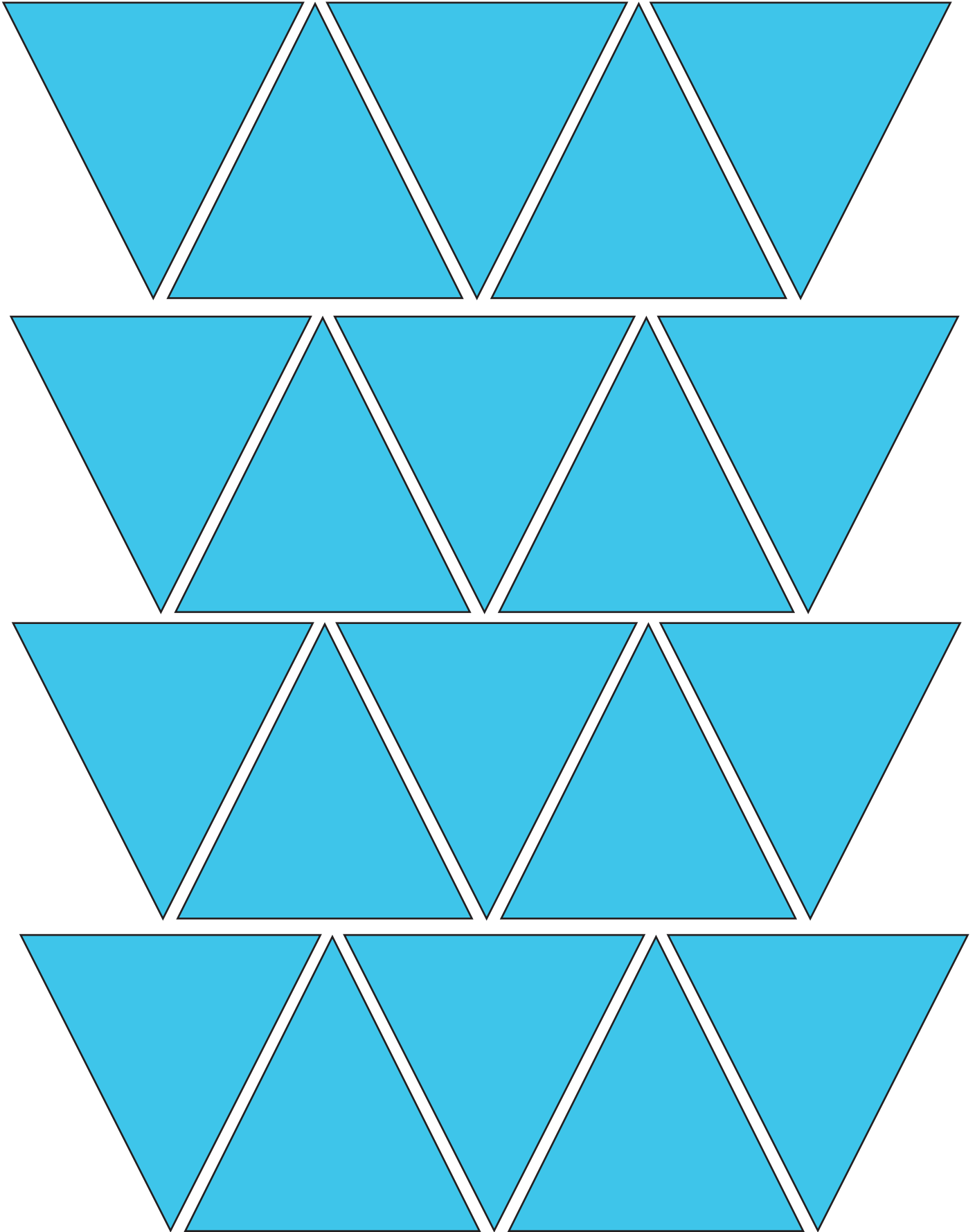
✂ Cut out along lines. Find more shapes on pp. 111-133.

Rectangles—blank or fill in with exclamations



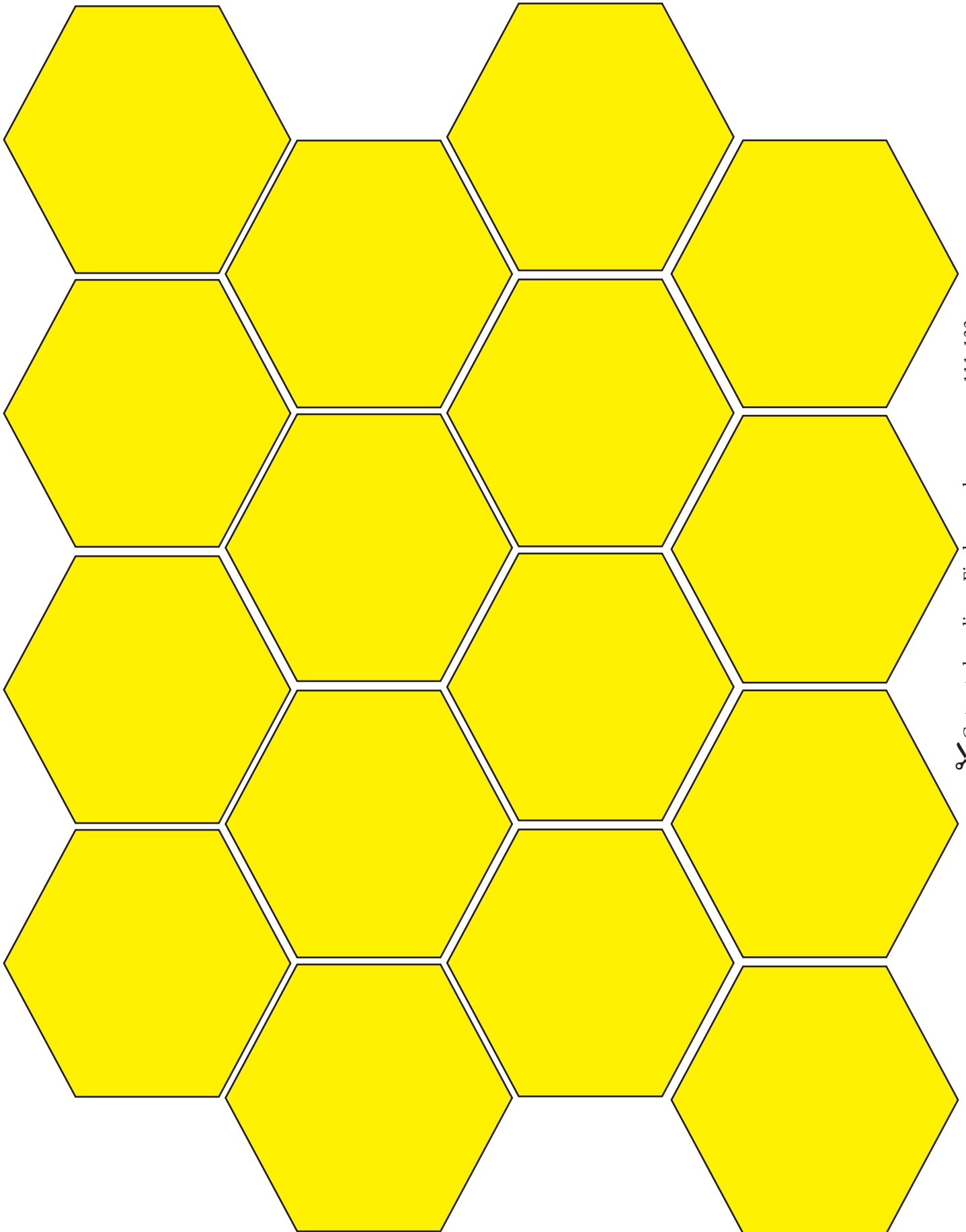
✂ Cut out along lines. Find more shapes on pp. 111-133.

Triangles—blank or fill in with adjectives



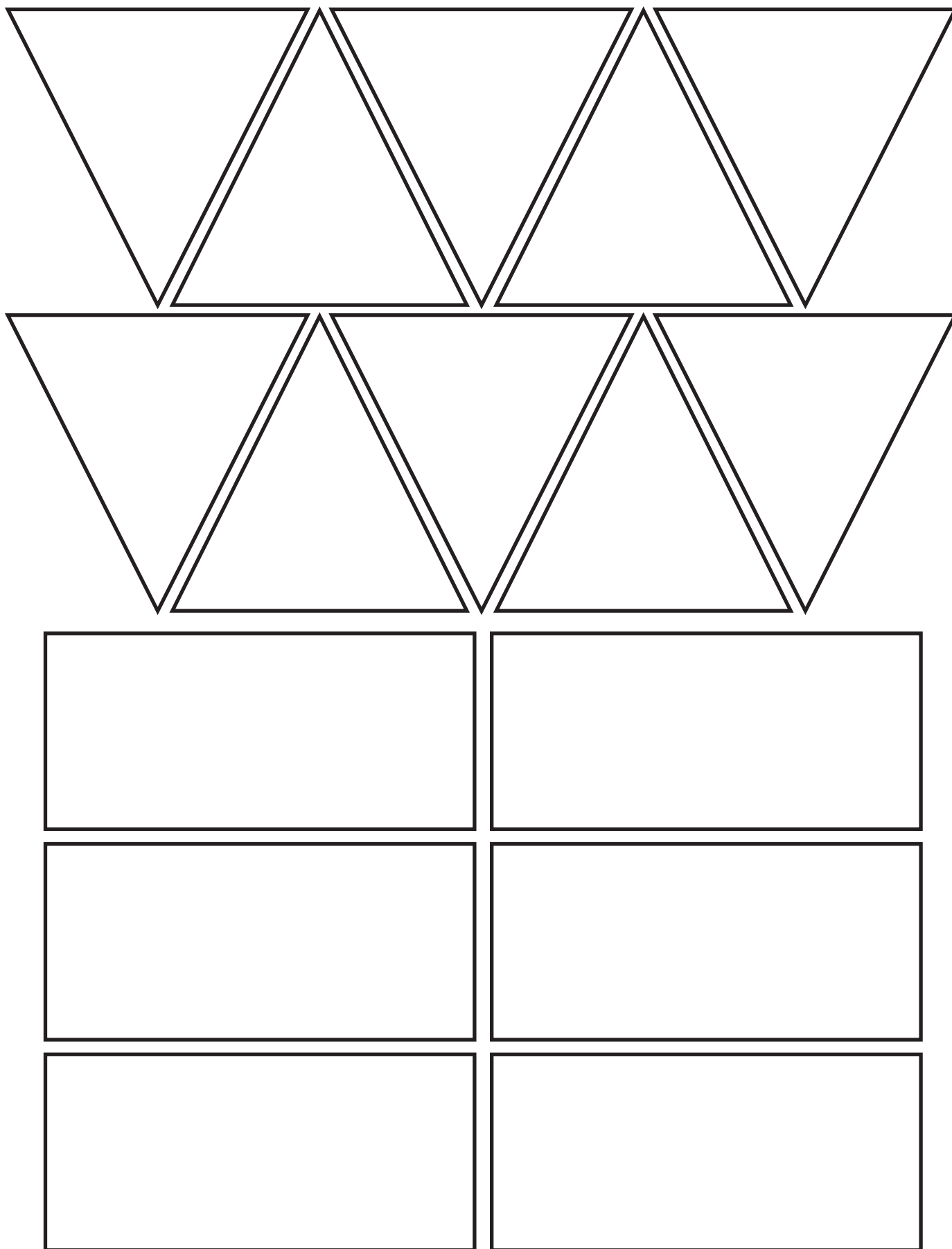
✂ Cut out along lines. Find more shapes on pp. 111-133.

Hexagons—blank or fill in with letters

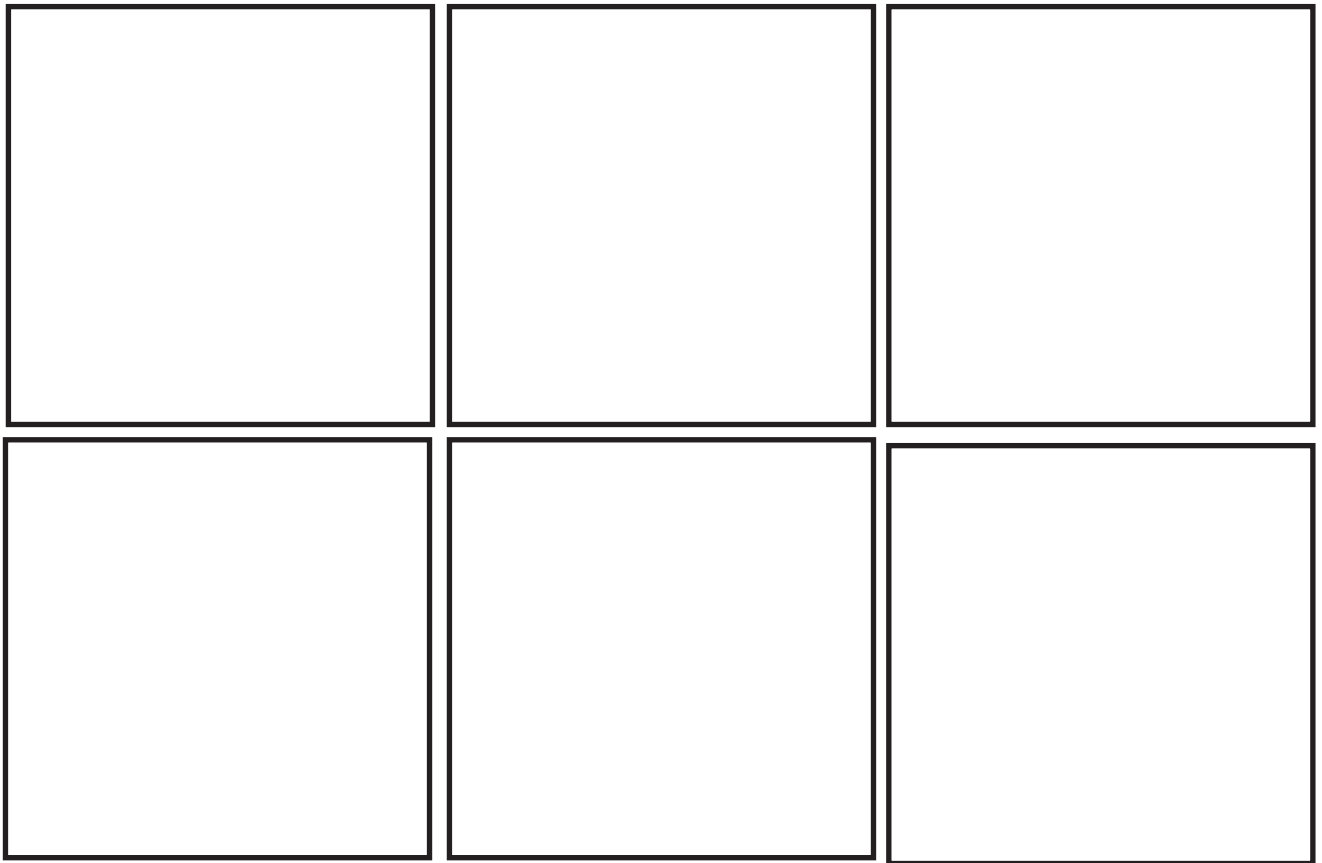
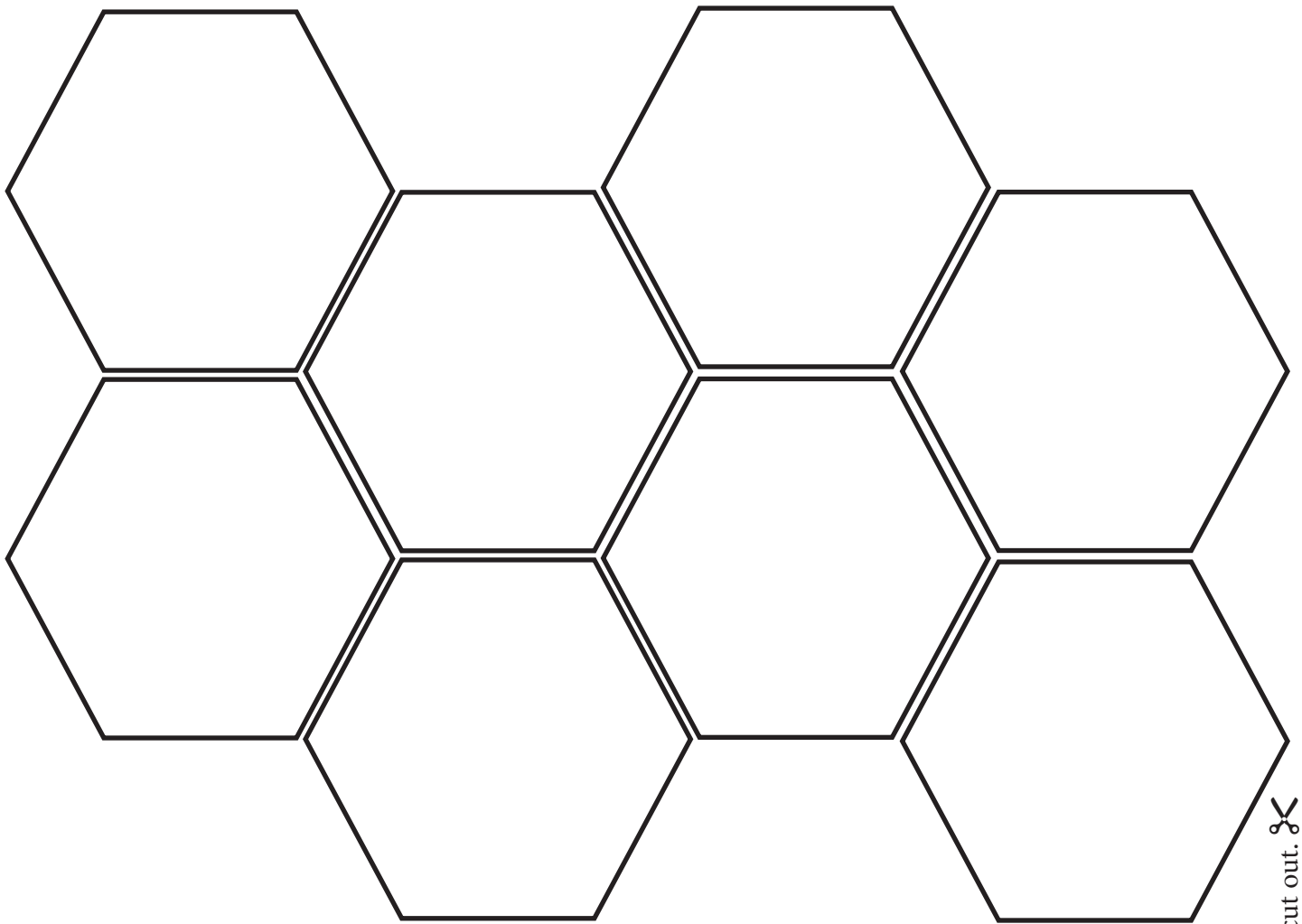


✂ Cut out along lines. Find more shapes on pp. 111-133.

Blank Shapes



✂ Cut out along lines. Find more shapes on pp. 111-133.



Photocopy on colored paper and cut out. ✂