

## Homework without the hassle

Sukindi is an Australian learning platform that supports Teachers, Parents and Students with an interactive homework app and downloadable resources.



Scan to start your  
free 7-day trial

[www.sukindi.com.au](http://www.sukindi.com.au)



## Shape Detectives Around Us - Foundation

| Table of Contents                        |  |
|------------------------------------------|--|
| Presentation: Shape Detectives Around Us |  |
| Teacher quick-start (p.2)                |  |
| Five 45-minute lesson plans (pp.3-7)     |  |
| Five colour references (pp.8-12)         |  |
| Support: trace parts (pp.13-14)          |  |
| Support: match parts (pp.15-16)          |  |
| Support: build a place (pp.17-18)        |  |
| Core: name the part (pp.19-20)           |  |
| Core: sort the parts (pp.21-22)          |  |
| Core: build a place (pp.23-24)           |  |
| Extension: change the rule (pp.25-26)    |  |
| Transfer: turned parts (pp.27-28)        |  |
| Extension: classroom front (pp.29-30)    |  |
| Kit 1: Part Detectives (pp.31-41)        |  |
| Kit 2: Build and Explain (pp.42-50)      |  |
| Quiz: Shape Detectives Around Us         |  |
| Assessment: Shape Detectives (pp.51-55)  |  |
| Rubric: Shape Detectives (p.56)          |  |



# Teacher quick-start

**Purpose and sequence.** Foundation Mathematics: name and sort familiar shapes, create a picture of a familiar place, and explain the shape of a named component. Teach five 45-minute lessons: notice a part; sort with a reason; find a part nearby or on the table; build a place picture; show learning in fresh contexts. Students need no independent reading or shape spelling.

**Prepare.** Use the 24-slide teaching deck and adult-read 10-question quiz. Print the Unit Plan at 100% / actual size, not fit-to-page, especially the kits. Keep each red answer page for teacher checking. Provide pencils/crayons, optional counters and simple real objects. Adults may use safe scissors to prepare cards and cutouts; students can select and direct an adult without cutting.

**Kit 1: Part Detectives.** Print pp.31–41: rules, four empty family mats, three interleaved card sheets, six tasks, nine rule markers and a checking guide. Cut the 12 rectangular cards around their dashed borders. Begin with a named component and the shape-family rule. Announce a different rule before re-sorting; set aside family mats when sorting by colour or another proper nouns help checking and need not be written by students.

**Kit 2: Build and Explain.** Print pp.42–50: rules, one worked classroom reference blank creation mat, three cutout sheets, six tasks, response-choice cards and a checking guide. Cut the actual 12 shape outlines; leave the panel IDs behind. Students choose at least one piece from at least two families, name two intended parts and explain one feature. The worked piece is one valid example; many different place pictures qualify.

**Shape language.** Introduce boundary and the outside edge. A circle has a closed curved boundary, zero straight sides and zero corners. A triangle is closed with three straight sides and three corners. A square has four equal straight sides and four square corners; turning it does not change its name. A rectangle has four square corners and opposite equal sides. A square is a special rectangle: the four-way mats separate squares from non-square rectangles. Accept correct broader rectangle reasoning, then clarify the special square name.

**Access and evidence.** Read names and directions aloud. Students may speak, point, place, draw, use pictures or a communication device, or dictate while an adult records their chosen response. An adult may handle a chosen piece; the student's mathematical choice remains independent. Record access separately from hints about the answer. Use a table scene instead of a walk. Assess naming, sorting, creating, named-part features and reasons separately; reading, cutting and artistic resemblance are not mathematics criteria. Use the fresh tasks on pp.51–53 with the guide, observation record and rubric on pp.54–56.

# Lesson 1 – Notice the part

**Learning and success.** Students identify a named component, match its outline and name its family. Look for a student who points to the intended part and shows a curved edge, straight side or corner to explain the name. Begin with familiar pictures; vocabulary is taught through pointing and tracing.

**Prepare.** Teaching slides 2–7; colour references pp.8–9; support practice pp.13 and 15 or core p.19, with matched keys immediately after each. Have one wheel, clock face, flag, square tile and non-square door panel available in pictures. Read part labels aloud.

**5 min – Notice.** Show a cart or clock picture. Ask, 'Point to the wheel / clock face. What shape is this part?' Listen before supplying names. If a student calls the whole cart a circle, point out its several different parts and return to the wheel's outside outline.

**10 min – Model.** Use slides 2–5 and references. Trace a circle's curved outside edge; it has no straight sides or corners. Trace a closed flag's three straight sides and touch its three corners. Compare a square tile with a non-square door panel: both have four square corners; the tile also has four equal sides. Say that a square is a special rectangle, and today's separate groups use its special name.

**10 min – Guide.** Use slide 6. Read a part name, ask a student to mark it, then match a true outline. Turn a square or triangle and ask whether its sides and corners changed. Use slide 7 to practise 'part first, shape second'. Invite a feature reason by speech, pointing or tracing; do not ask students to read the labels independently.

**15 min – Apply.** Core: p.19 names parts in words and positions and asks for a feature. Support: offer two outlines with pp.13 or 15, adult-read names and reference; then remove the shape-name hint for a new item. Extend: turn a chosen outline and justify why its name stays, rather than learning extra polygon names. An adult may trace to record the student's directed response.

**5 min – Check and respond.** Show a different named part. Ask, 'What shape is this part? Show what makes you think that.' Record the chosen part, name and feature separately. Re-model a missed boundary or corner, then add a new part without the content hint. Adult-read quiz questions 1–5 can be used across this lesson and the next; reveal each answer only after students respond.

## Lesson 2 – Sort with a reason

**Learning and success.** Students sort named components by an announced rule and explain membership with a visible feature. Success includes placing a part by shape and showing why; an explicitly changed colour rule may put the same card into a different group.

**Prepare.** Teaching slides 8–12; worked sorting reference p.10; Kit 1 pp.31–41; core part-sort p.21 or extension re-sort p.25, with red keys. Prepare all 12 cards and keep the checking guide out of student view. The four mats separate squares from non-square rectangles.

**5 min – Retrieve.** Read a named component on a card. Students point to its outside boundary and name or select its family. Briefly retrieve the circle's curved boundary, triangle's three straight sides and the square / non-square rectangle convention.

**10 min – Model.** Use slide 8 and p.10: the wheel outline and clock face belong together because both have a curved boundary. Place a different triangle by its three straight sides. Contrast a square tile with a non-square door panel; do not use colour, size or position as a shape family clue. Show how to check only after a choice and reason.

**10 min – Guide.** With the empty mats and slides 9–10, take about 1 turn: list the part name; point to the intended component; choose a family; place the card, show feature; check. Invite a partner to ask, 'Which part? What is your clue?' Accept a valid broader rectangle explanation for a square, then clarify the special square group.

**15 min – Apply.** Core: play Kit 1 or complete 21, accounting for every named part. Support: start with one card from two families and an adult-read reference, then expand and fade content hints. Extend: use slide 11 and p.25; announce colour as the new rule, set the family mats aside, and use blue / red / yellow markers. Explain how group's membership changed. Property tasks use their stated rule, not a guess from an initial colour.

**5 min – Check and respond.** Approach each student to place one new card and show a geometric reason. Ask, 'Which rule could change its group?' if ready. Note independent choice separately from adult reading or handling. Re-teach the exact misconception: part versus whole, corner count or using colour as shape identity. Quiz questions 6–8 provide brief adult-read checks, with their answers shown afterwards.

## Lesson 3 – Find a part nearby

**Learning and success.** Students recognise and describe the shape of a clearly identified component in a familiar place. Success is naming the part, naming or matching its shape and showing a relevant boundary feature. A supported local observation can be close to a familiar shape; exact printed tasks keep exact keys.

**Prepare.** Teaching slides 13–16; local-example reference p.12; turned-part practice p.27 and key p.28; optional Kit 1 cards. Prepare a safe short school hunt or a table scene with a clock-face picture, tile, door-panel picture and flag. No particular home, mobility or cultural experience is assumed.

**5 min – Retrieve.** Show a whole classroom picture. Ask students to point to one part before naming a shape. Contrast the clock face with its surrounding case. Turn a square tile and retrieve the equal sides and square corners that stay.

**10 min – Model.** Use p.12 and slide 14. The printed clock face exactly matches a circle. A roughly round stone outline may be close to a circle: explain the round appearance and one edge, rather than calling it an exact circle. Say, 'I am looking at this outside outline, not naming the whole object.' For a square panel, trace four equal straight sides and indicate square corners.

**10 min – Guide.** Use a school walk or the same table alternatives. Each pair chooses a safely accessible, clearly marked flat front or outline. One student points to the component; the other asks for its name and a feature. Adults help identify which parts are being discussed without giving its shape answer. Avoid perspective or rounded-corner items for exact-shape matching.

**15 min – Apply.** Core: pairs choose a component, name / select its family and match an outline; use p.27 for transfer after a turn. Support: provide two familiar part pictures and two outline choices, adult-read names and a reference, provide the shape clue. Extend: compare an exact front outline with a justified close-to-example for explaining turning / changing size keeps the geometric properties. Accept pointing, placement or dictation.

**5 min – Check and report.** Ask, 'Which part did you find? What shape is its outline? Show a clue.' Record the component and the feature used, not whether a walk or spoken sentence was possible. Where a reason is present, model one feature and try another part. Use adult-read quiz question 9 to check turning; accept correct broader rectangle reasoning and clarify the special square name.

## Lesson 4 – Build a familiar place

**Learning and success.** Students create a flat front picture using at least three pieces from at least two shape families. They name two intended parts and show one geometric reason for a choice. Creating and explaining are essential learning; an attractive copy of the model is not the goal.

**Prepare.** Teaching slides 17–19; classroom creation reference p.11; Kit 2 pp.42–50, including the blank mat and 12 cutouts; core p.23, support p.17 or extension p.29, with their keys. Adults can prepare actual shape outlines in advance. Offer pointing / placing / drawing choices and the response cards.

**5 min – Retrieve.** Turn a square cutout and a triangle. Students name or select each family and show a feature that remains. Explain the square / non-square rectangle convention before choosing pieces.

**10 min – Model.** Use p.11, p.43 and slide 18 to make one classroom front: a non-square rectangle for a door, square for a poster, circle for a clock face and triangle for a flag. Name each depicted part and justify its boundary. Say, 'This is one possible place picture. You can make a different one.' Count actual pieces and families. The drawing represents a place; it is not a scale map or a physical object.

**10 min – Guide.** Together make a different front view. Invite students to choose a piece for a purpose, place it, name the intended part and trace a feature. Let students change a piece after explaining it. Recount at least three pieces and at least two families. Do not prescribe the model's arrangement or judge artistic resemblance.

**15 min – Apply.** Core: Kit 2 or p.23 builds a classroom / familiar outdoor picture and explains choices. Support: use p.17 with adult-precut pieces and students directing an adult; provide two alternatives, then fade content hints. Extend: p.29 makes a different classroom front, turns a piece and explains why its family stays. Adult handling or recording remains access when the student's choices and reason are independent.

**5 min – Check and respond.** Ask each student to identify two used parts and explain one shape feature. Record counting and reasoning separately from naming; neither is replaced by copying a reference. Use a missing family / part reason with a different piece. Adult-read quiz question 10 checks the three-piece / two-family criterion; compare the actual parts and reveal the answer after responses.

## Lesson 5 – Show new learning

**Learning and success.** Gather separate evidence of naming, sorting, creating, recognising / describing named components and giving reasons in fresh contexts. Secure mathematics can use adult-read labels, prepared pieces or adult recording. Missing creation or explanation cannot be averaged away by strong picture recognition.

**Prepare.** Teaching slides 20–23; fresh assessment pp.51–53; teacher marking guide p.54, observation record p.55 and rubric p.56. Keep keys and worked pictures out of view. Prepare blank mats / cutouts and familiar practice stations for students who are not conferencing.

**5 min – Retrieve.** Recall a strategy: point to the intended part, trace its boundary and show a feature. Name the four families without using the assessment picture bank. Avoid teaching the answers to the fresh items.

**5 min – Explain response choices.** Read the fresh directions aloud. Students may point, draw an ID, place a piece, speak, use pictures / a communication device or dictate. An adult may read a part name, cut, handle or record a chosen response. Explain that a hint identifying the correct family or feature is a content prompt and will be recorded separately.

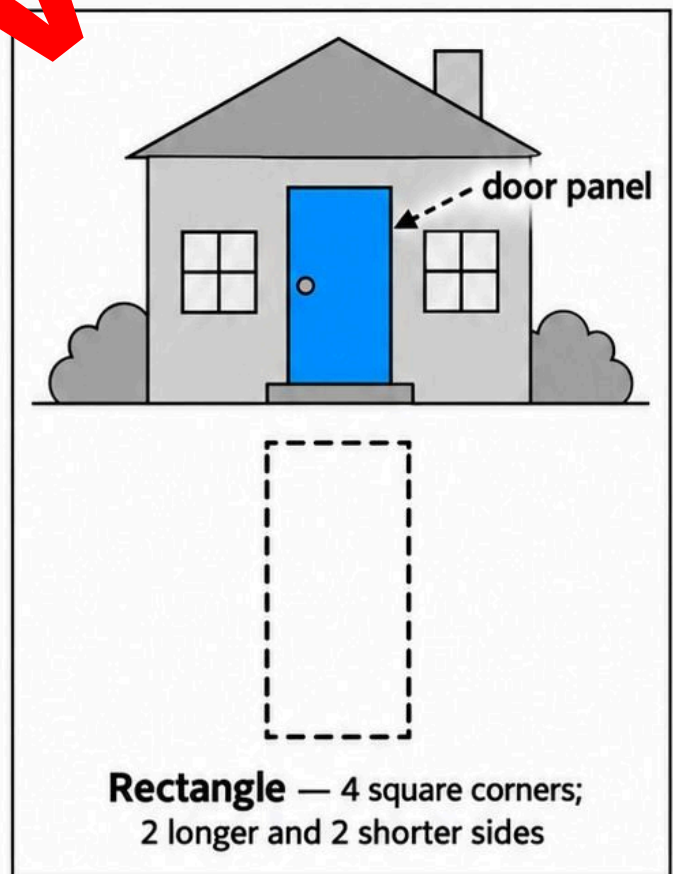
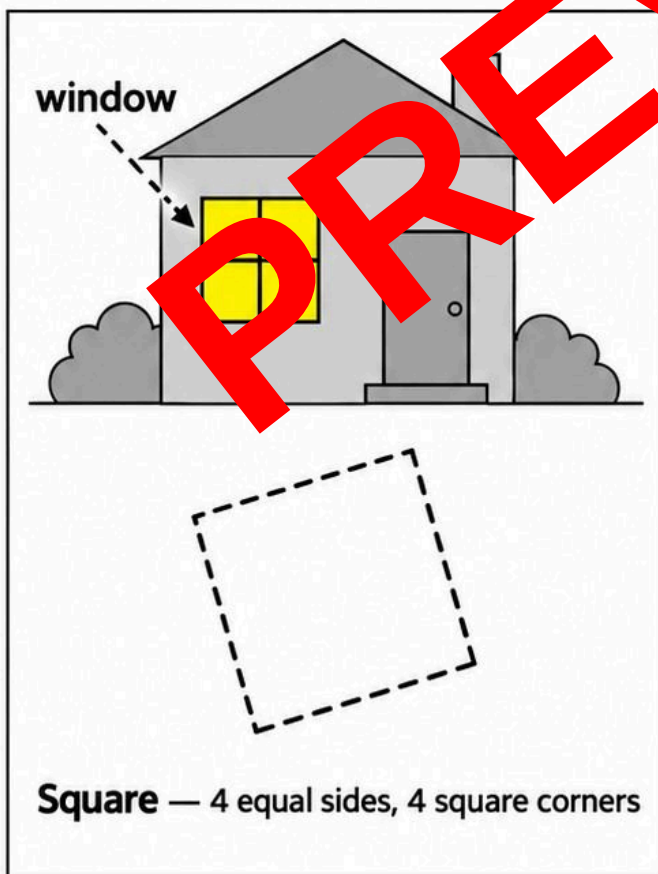
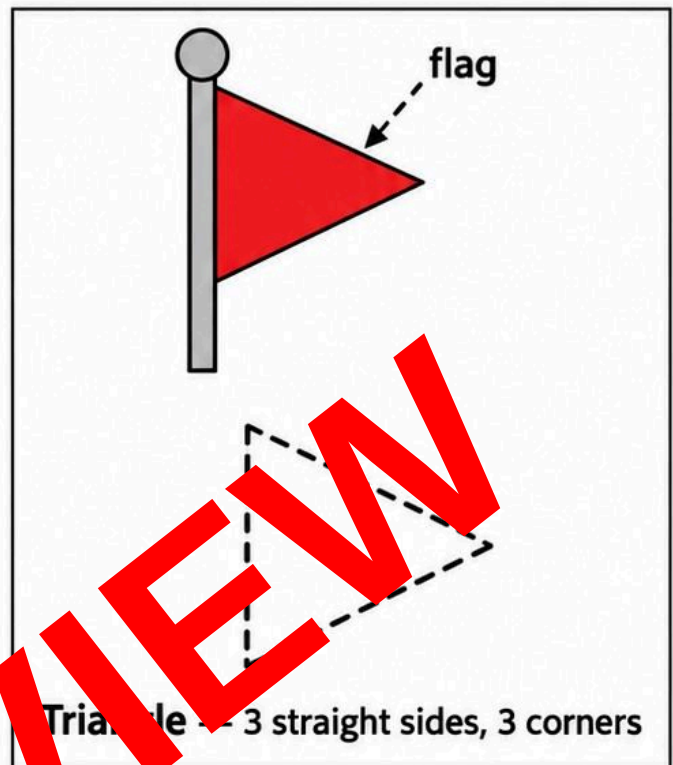
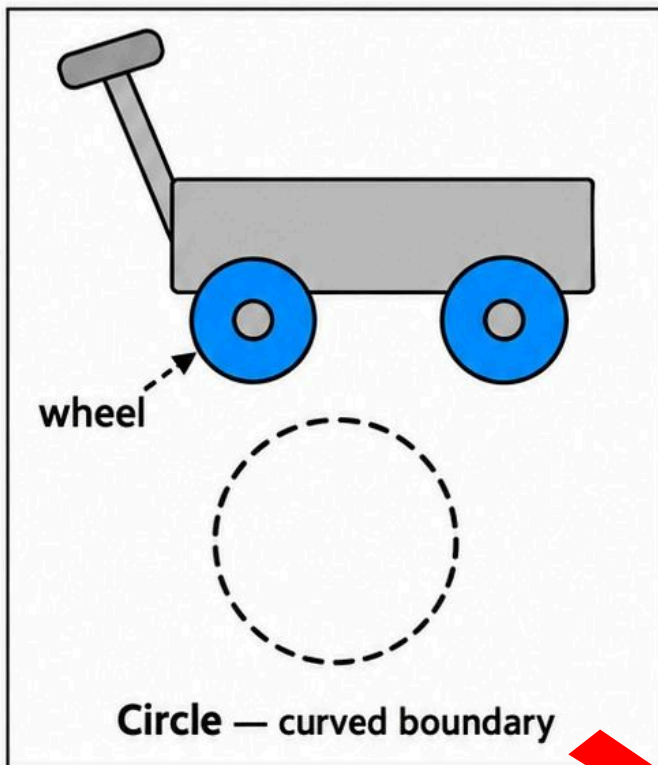
**25 min – Fresh tasks and focus observations.** Students sort the eight new marked components on p.51 and independently name one from each family. On p.52 they create a new playground / outdoor front picture with at least three shapes from at least two families, name the two parts and justify one match. On p.53 they identify the four town-board components, give each a feature and explain one match. Use these as stations, with unfinished evidence collected later. Confer with about six focus students for roughly four minutes each, while others practise independently. Observe their choices and reasons; use p.55 to record each share the exact evidence, access and any content prompts.

**5 min – Feedback and re-teach.** Use p.54 to check exact printed items and open-creation criteria; other accurate pictures qualify. Accept correct broader rectangle reasoning for the square, then clarify its special name. Give feedback on the student's actual missing step, such as selecting the named part or explaining a corner. Re-teach it and gather a fresh check later; distinguish that supported check from the first independent attempt.

**5 min – Reflect and plan.** Students show one part, its shape and a clue by their chosen response method. Use the five fabric areas separately to plan the next lesson. Continue focus observations for the remaining students during normal later rotations; do not claim independent whole-class assessment in this 25-minute block. Reading, spelling, cutting skill and artistic finish do not determine the mathematics judgement.

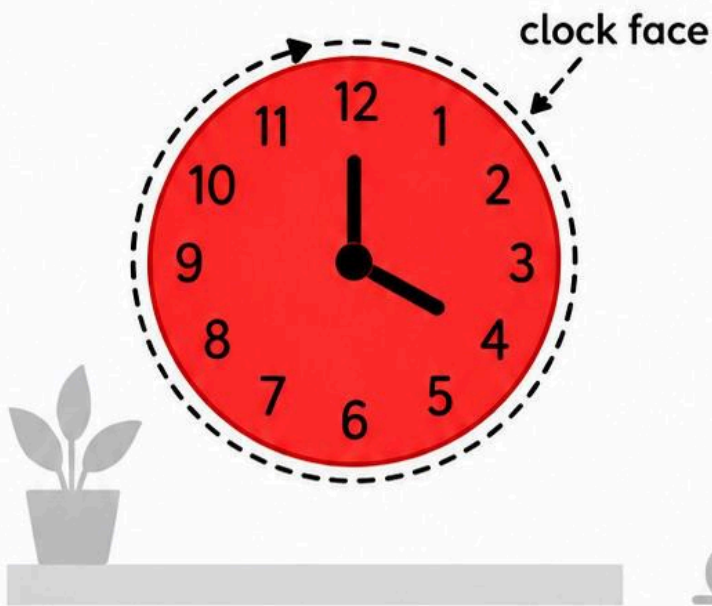
# A shape in a part

Point to the part. Trace its outline.



Name the part, not the whole object. A square is a special rectangle.

# Look at the boundary



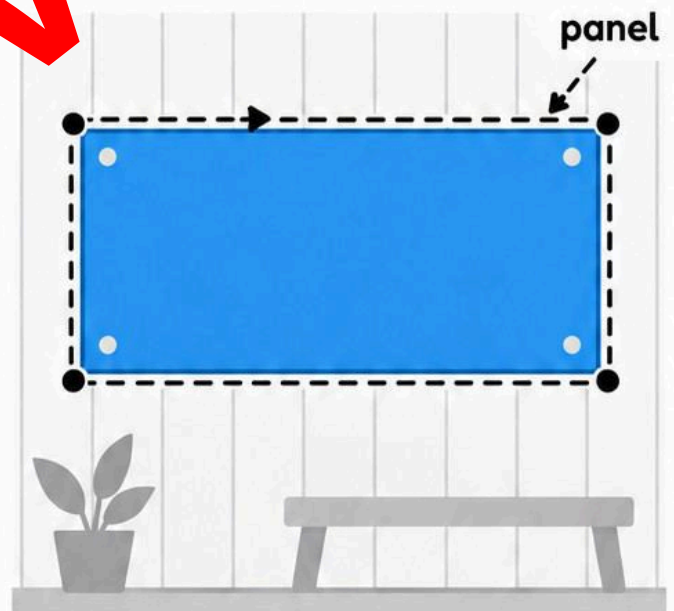
**Circle:**  
curved boundary.  
0 straight sides. 0 corners.



**Triangle:**  
3 straight sides.  
3 corners.



**Square:**  
4 equal straight sides.  
4 square corners.



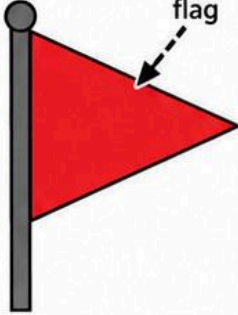
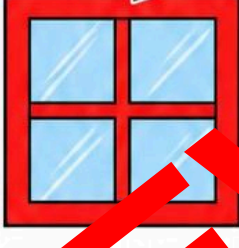
**Rectangle:**  
4 square corners.  
2 longer sides and 2 shorter sides.

**Teacher note:** A square is a special rectangle. Here we sort squares separately from non-square rectangles.

# Sort the marked parts

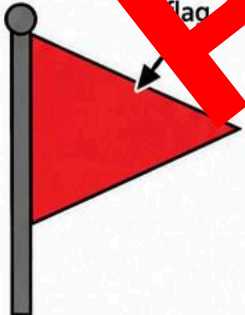
## First rule: shape

Look at the shape of the marked part. Put each card in the group with the same shape.

| Circle                                                                                                                   | Triangle                                                                                                                  | Square                                                                                                                                     | Rectangle                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>A circle has a curved boundary.</p> |  <p>A triangle has 3 straight sides.</p> |  <p>A square has 4 equal sides and 4 square corners.</p> |  <p>A rectangle has 4 square corners and 2 longer, 2 shorter sides.</p> |

## New rule: colour

Now look at the colour of the marked part. Put each card in the group with the same colour.

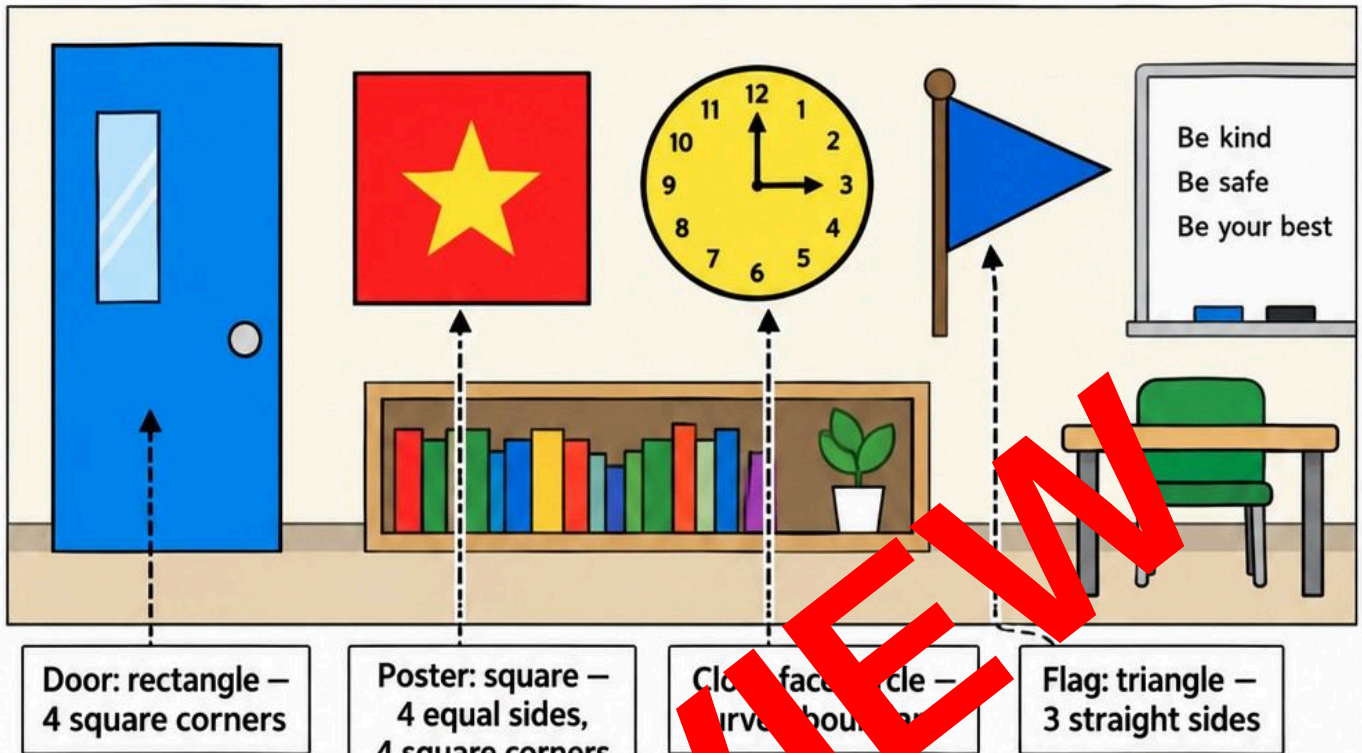
| Red                                                                                                                                                                     | Blue                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |   |

A new rule can change a card's group.  
Colour does not name its shape.

A square is a special rectangle. **This** shape sort separates squares from non-square rectangles.

# Build a familiar place

One valid example: a classroom front picture



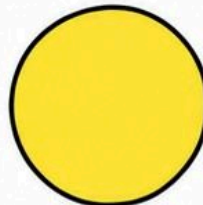
## The source shapes



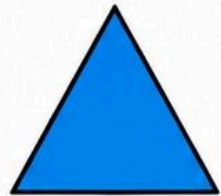
Rectangle  
(not a square)



Square  
(turned square)



Circle



Triangle

## Another valid picture



Different pictures  
can work.

Use at least 3 pieces  
from 2 shape families.

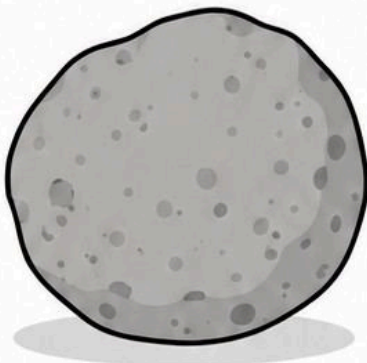
This is a flat picture of a place. It is not a scale map.

# Point and explain

Point to the part. Name its shape. Show the feature.



## Close to a shape



This **stone** is close to a circle. Its edge curves around. It is not an exact circle.

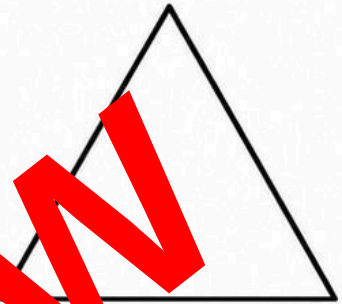
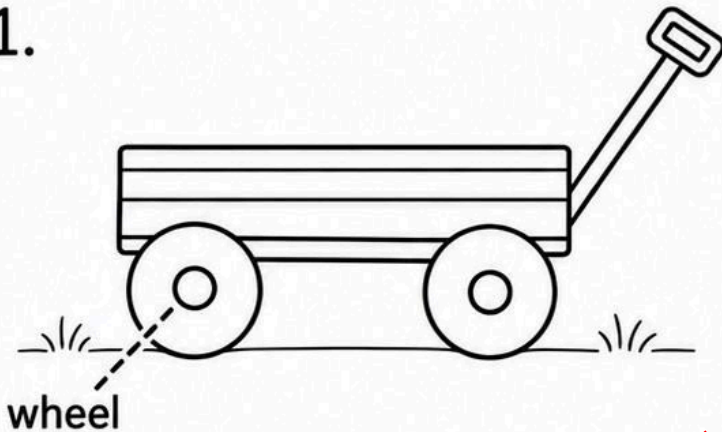
A table picture can replace a walk. Name the part, not the whole object.

# Find the named part

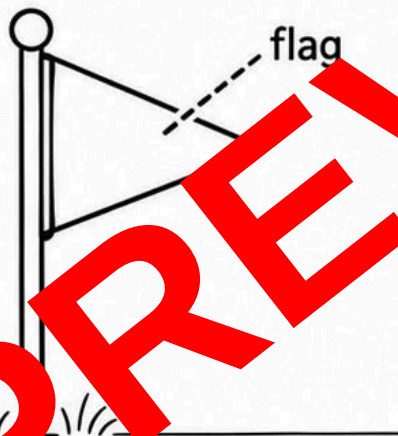
Name: \_\_\_\_\_

Point to each marked part. Match it to an outline.

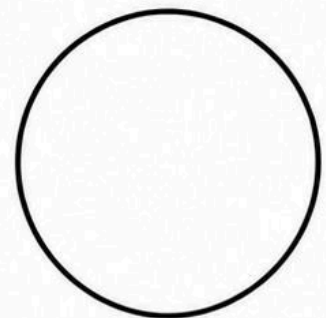
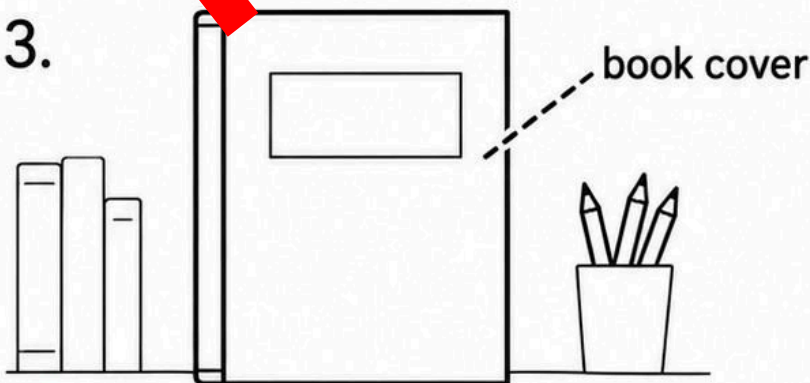
1.



2.



3.



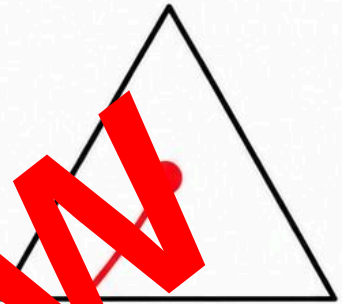
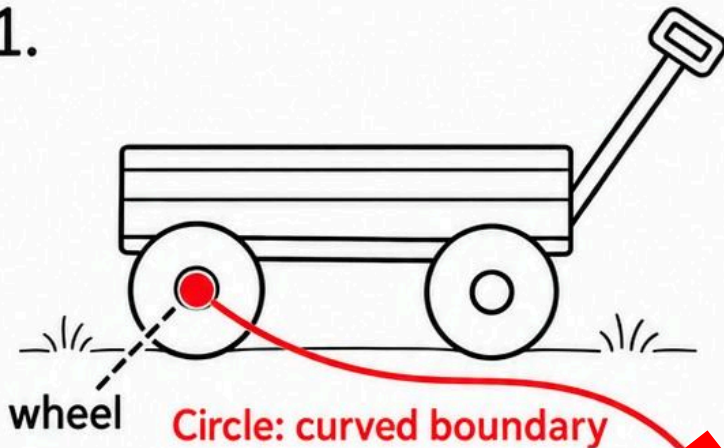
Adults read the part names. Students may point or draw links.

# Find the named part

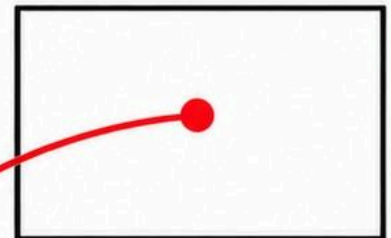
Name: ANSWERS

Point to each marked part. Match it to an outline.

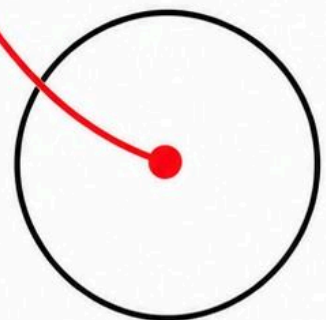
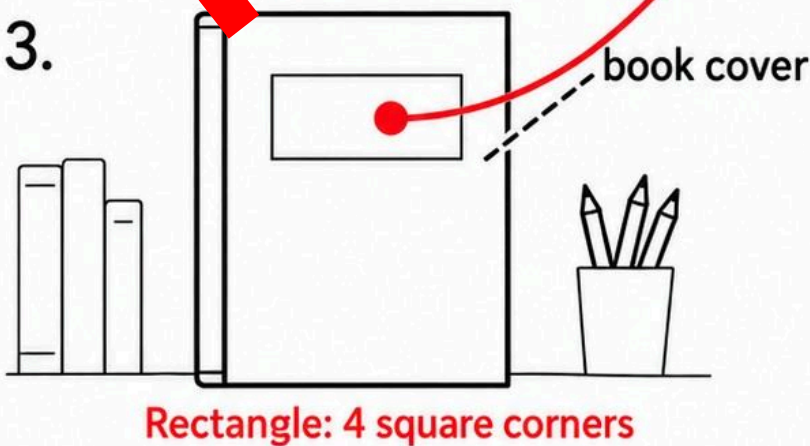
1.



2.



3.

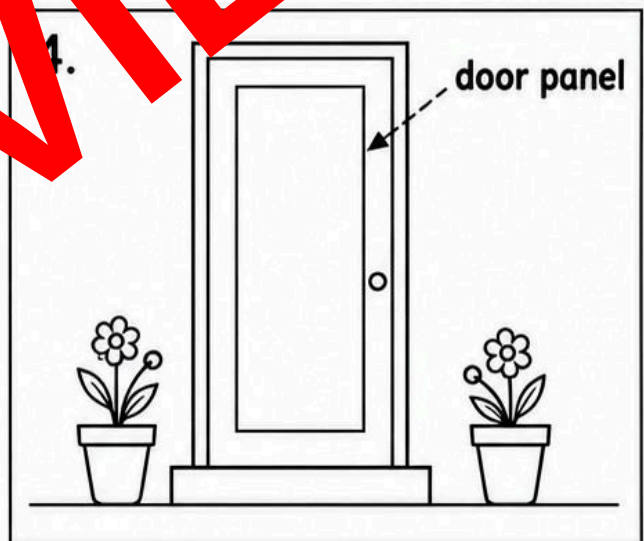
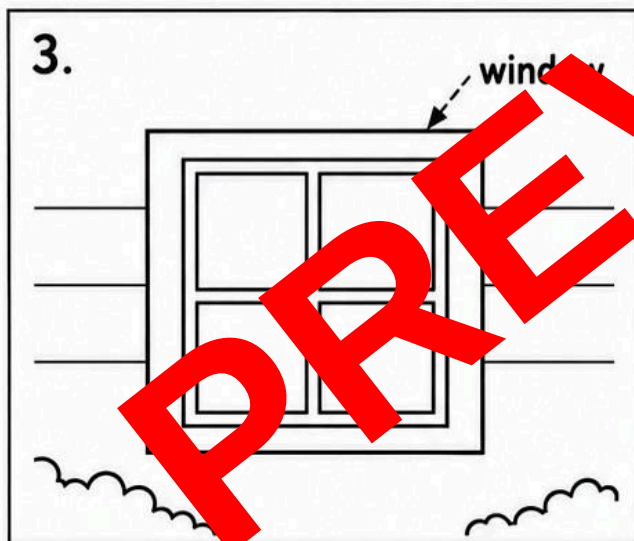
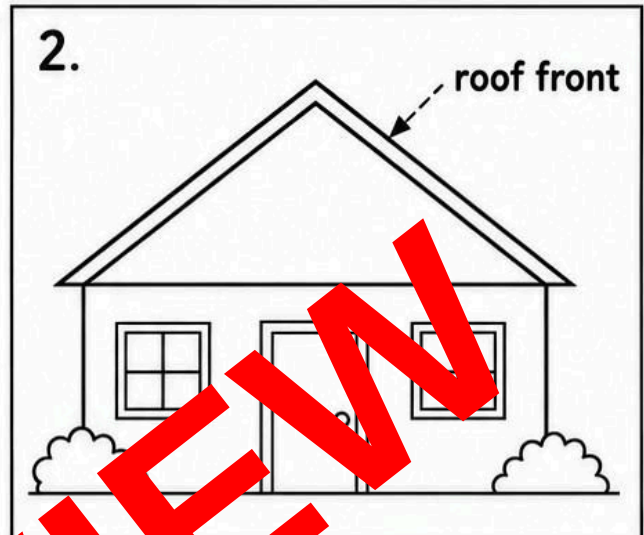
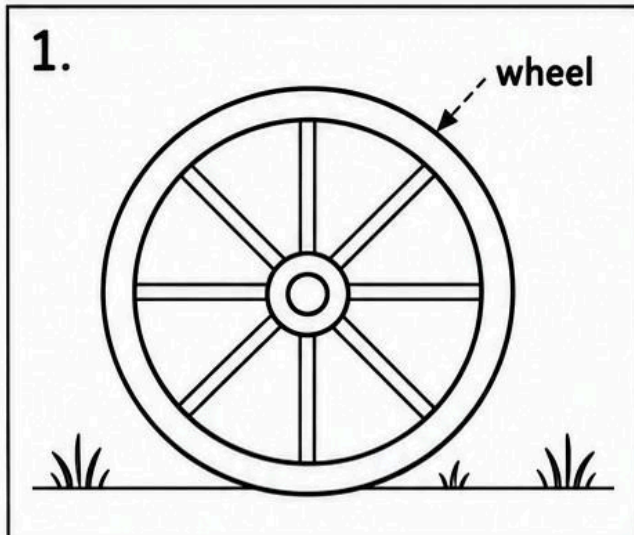


Adults read the part names. Students may point or draw links.

# Match the part to a name

Name: \_\_\_\_\_

Point to a marked part. Choose its shape name.



**Square**

**Circle**

**Rectangle**

**Triangle**

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

Adults read words. Students point, connect or dictate.

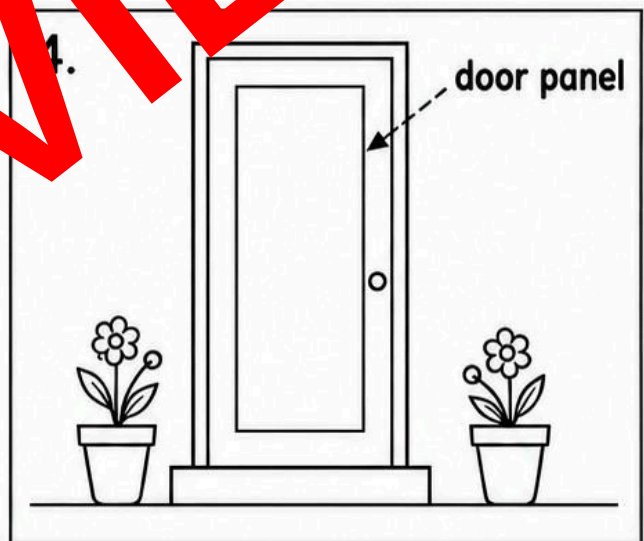
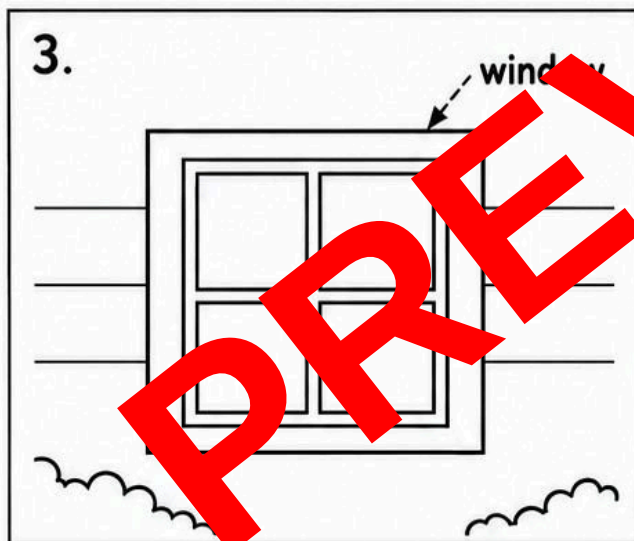
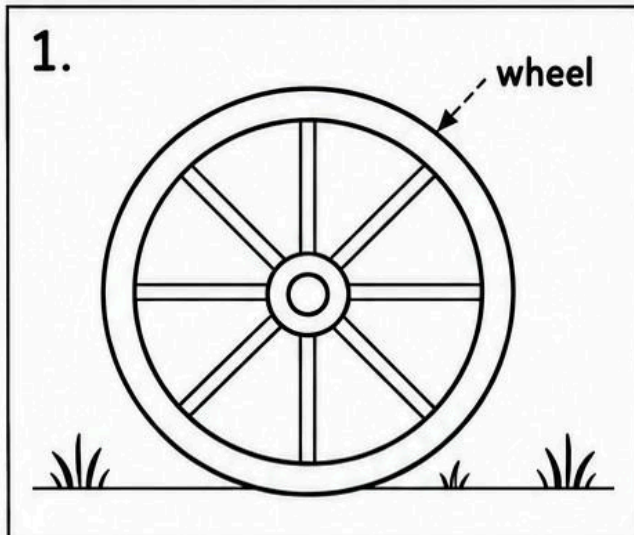
For this sort, Rectangle means a non-square rectangle. A square is a special rectangle.

True square width = height; four square corners, no curved corners or perspective.

# Match the part to a name

Name: \_\_\_\_\_ **ANSWERS**

Point to a marked part. Choose its shape name.



**Square**

**Circle**

**Rectangle**

**Triangle**

1. **Circle**  
curved boundary

2. **Triangle**  
3 straight sides

3. **Square**  
4 equal sides,  
square corners

4. **Rectangle**  
4 square corners,  
2 longer/2 shorter sides

Adults read words. Students point, connect or dictate.

For this sort, Rectangle means a non-square rectangle. A square is a special rectangle.

True square width = height; four square corners, no curved corners or perspective.

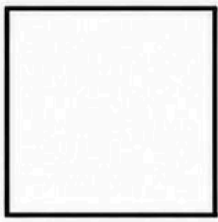
# Make a toy-cart picture

Name: \_\_\_\_\_

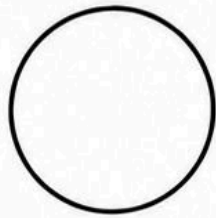
Choose or draw a square body panel and circle wheels.

Add a triangle flag or a rectangle handle panel.

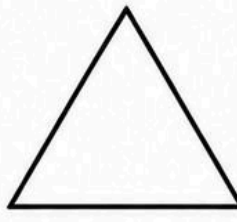
Point to a part. Name its shape. Show one feature.



square



circle



triangle



rectangle

**PREVIEW**

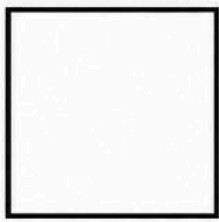
Students choose the parts. Adults may prepare cuts, place chosen pieces or record words.

My part: \_\_\_\_\_ My shape: \_\_\_\_\_ I can show: \_\_\_\_\_

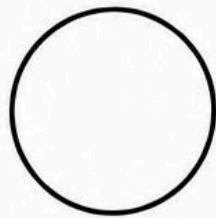
# Make a toy-cart picture

Name: ANSWERS

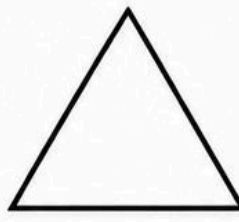
Choose or draw a square body panel and circle wheels.  
Add a triangle flag or a rectangle handle panel.  
Point to a part. Name its shape. Show one feature.



square



circle



triangle



rectangle

## One valid example

body panel: square,  
4 equal sides

flag: triangle,  
3 straight sides

wheel: circle,  
curved boundary

wheel: circle,  
curved boundary

Accept other valid placements or a rectangle handle panel.  
Check chosen shape names and features, not artistic likeness.

Students choose the parts. Adults may prepare cuts, place chosen pieces or record words.

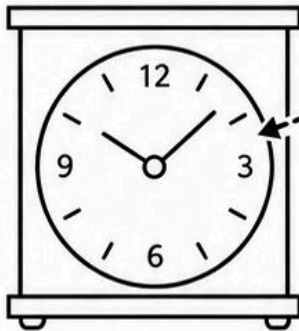
My part: wheel My shape: circle I can show: curved boundary

# Describe a marked part

Name: \_\_\_\_\_

Name each marked part's shape. Point to or tell a feature.

1.

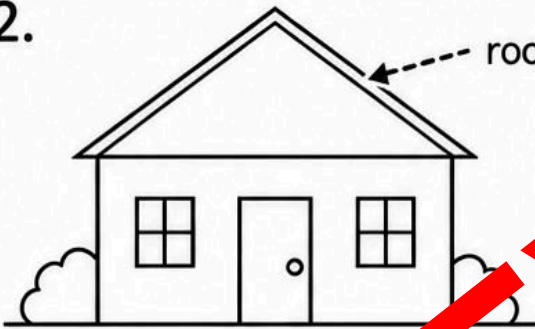


clock face

Shape: \_\_\_\_\_

Feature: \_\_\_\_\_

2.



roof front

Shape: \_\_\_\_\_

Feature: \_\_\_\_\_

3.

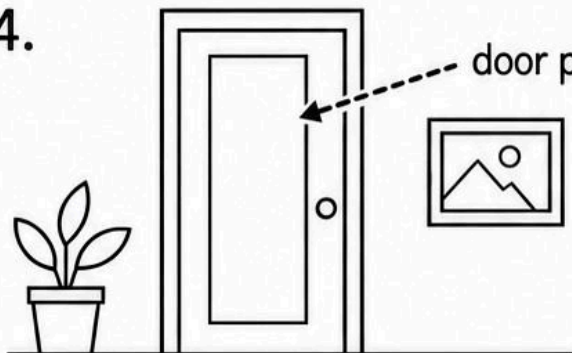


poster

Shape: \_\_\_\_\_

Feature: \_\_\_\_\_

4.



door panel

Shape: \_\_\_\_\_

Feature: \_\_\_\_\_

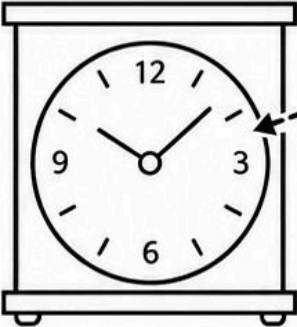
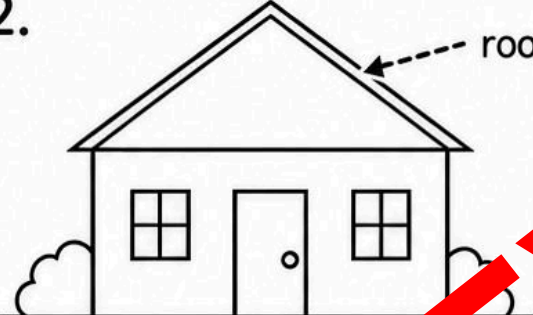
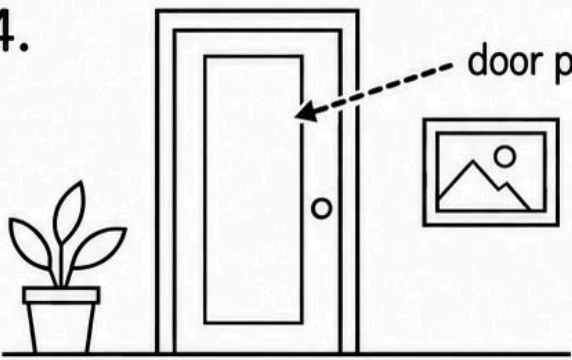
Point, say or dictate. Adults may record your chosen answer.

☐

# Describe a marked part

Name: **ANSWERS**

Name each marked part's shape. Point to or tell a feature.

|                                                                                                                 |                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <p>1.</p>  <p>clock face</p>   | <p>Shape: <b>circle</b></p> <p>Feature: <b>curved boundary;</b><br/><b>0 straight sides, 0 corners</b></p>   |
| <p>2.</p>  <p>roof front</p>  | <p>Shape: <b>triangle</b></p> <p>Feature: <b>3 straight sides,</b><br/><b>3 corners</b></p>                  |
| <p>3.</p>  <p>poster</p>     | <p>Shape: <b>square</b></p> <p>Feature: <b>4 equal straight sides,</b><br/><b>4 square corners</b></p>       |
| <p>4.</p>  <p>door panel</p> | <p>Shape: <b>rectangle</b></p> <p>Feature: <b>4 square corners;</b><br/><b>2 longer, 2 shorter sides</b></p> |

Point, say or dictate. Adults may record your chosen answer.

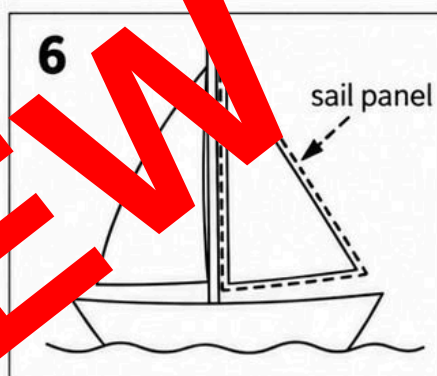
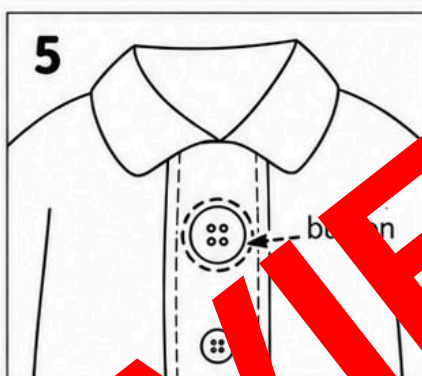
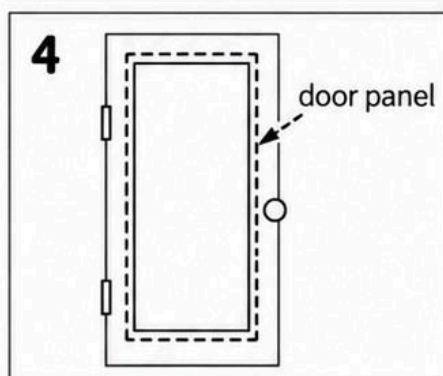
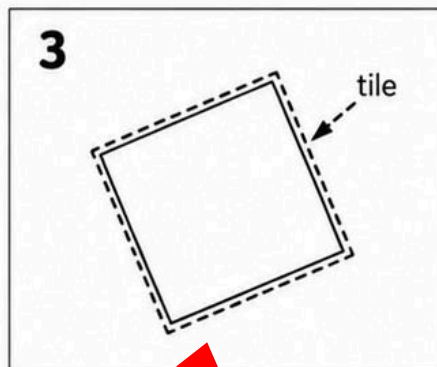
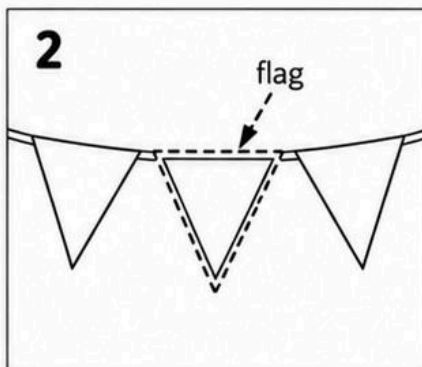
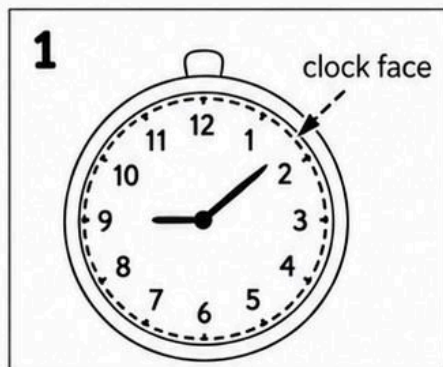
A square is a special rectangle. Accept explained rectangle reasoning and clarify square.



# Sort environment parts

Name: \_\_\_\_\_

Look at each marked part. Point or record its number in a shape group.



**Circle**

**Triangle**

**Square**

**Rectangle**

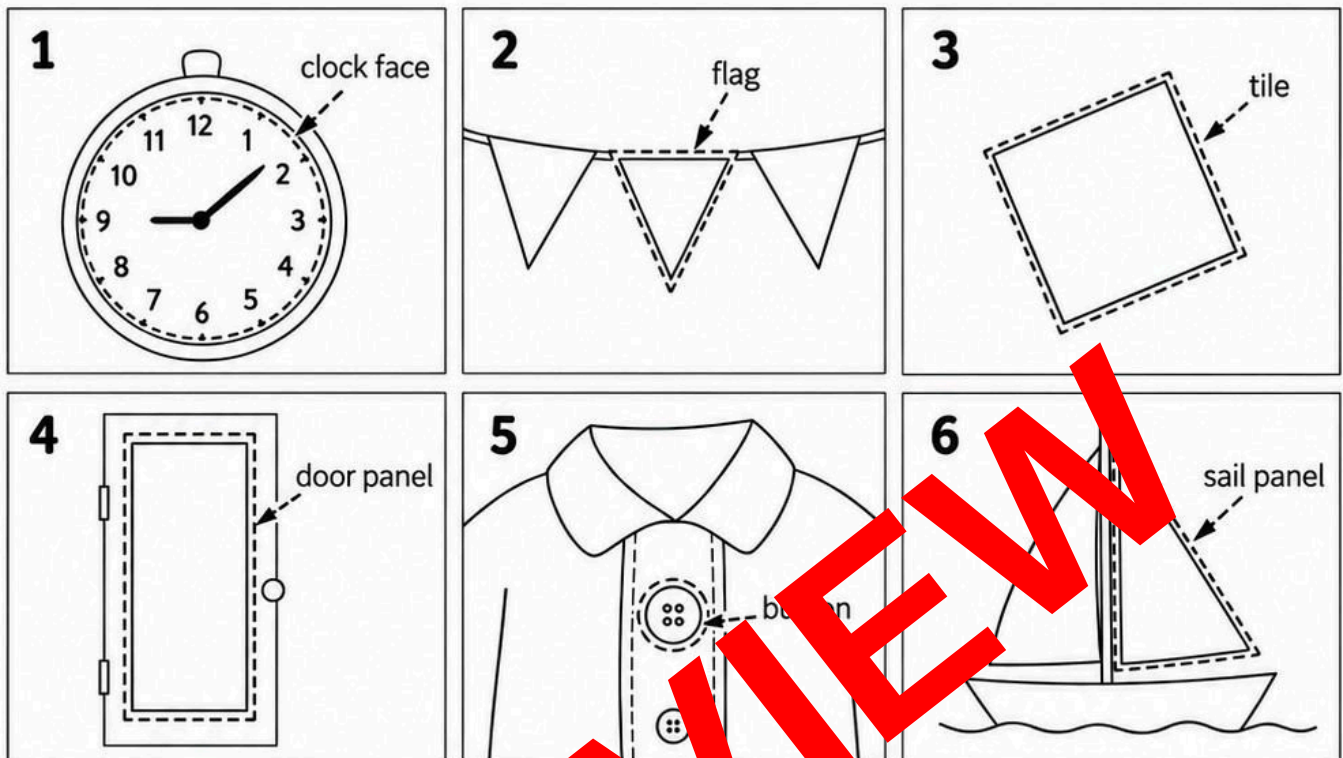
Name one part in each group. Adults may read names and record your choice.

A square is a special rectangle. This sort separates squares from non-square rectangles.

# Sort environment parts

Name: **ANSWERS**

Look at each marked part. Point or record its number in a shape group.



**Circle**

**1, 5**

Curved boundary

**Triangle**

**2, 6**

3 straight sides, 3 corners

**Square**

**3**

4 equal sides,  
4 square corners

**Rectangle**

**4**

4 square corners;  
2 longer, 2 shorter sides

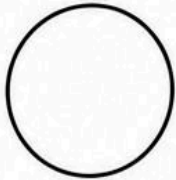
Name one part in each group. Adults may read names and record your choice.

A square is a special rectangle. This sort separates squares from non-square rectangles.

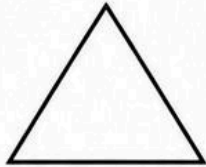
# Build my familiar place

Name: \_\_\_\_\_

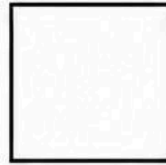
1. Make a front picture of a classroom or outdoor place.
2. Use at least 3 shapes from at least 2 shape families.
3. Name or point to 2 parts. Show 1 feature.



Circle



Triangle



Square



Rectangle

**PREVIEW**

Part 1: \_\_\_\_\_ Shape: \_\_\_\_\_

Part 2: \_\_\_\_\_ Shape: \_\_\_\_\_

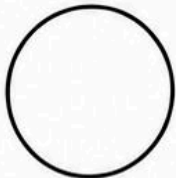
I can show: \_\_\_\_\_

Students choose. Use pieces, drawing, pointing or dictation.  
Adults may prepare cuts or place chosen pieces.

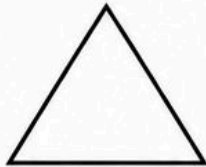
# Build my familiar place

Name: **ANSWERS**

1. Make a front picture of a classroom or outdoor place.
2. Use at least 3 shapes from at least 2 shape families.
3. Name or point to 2 parts. Show 1 feature.



Circle



Triangle

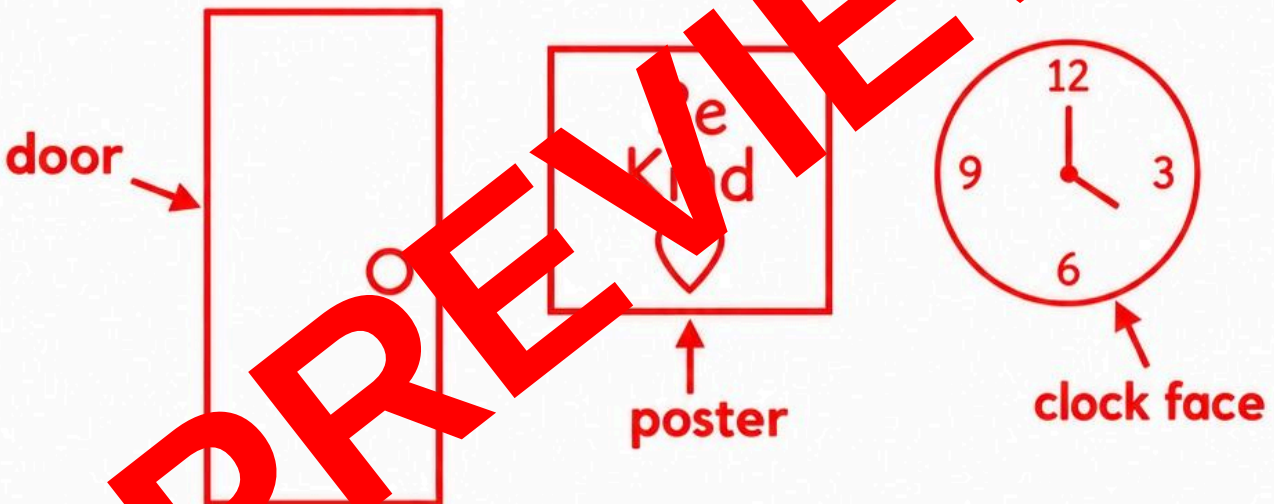


Square



Rectangle

**One valid example**



Accept other classroom or outdoor pictures: at least 3 shapes,  
2 families, 2 named parts and 1 feature.

Artistic likeness is not assessed.

Part 1: **door**

Shape: **rectangle**

Part 2: **poster**

Shape: **square**

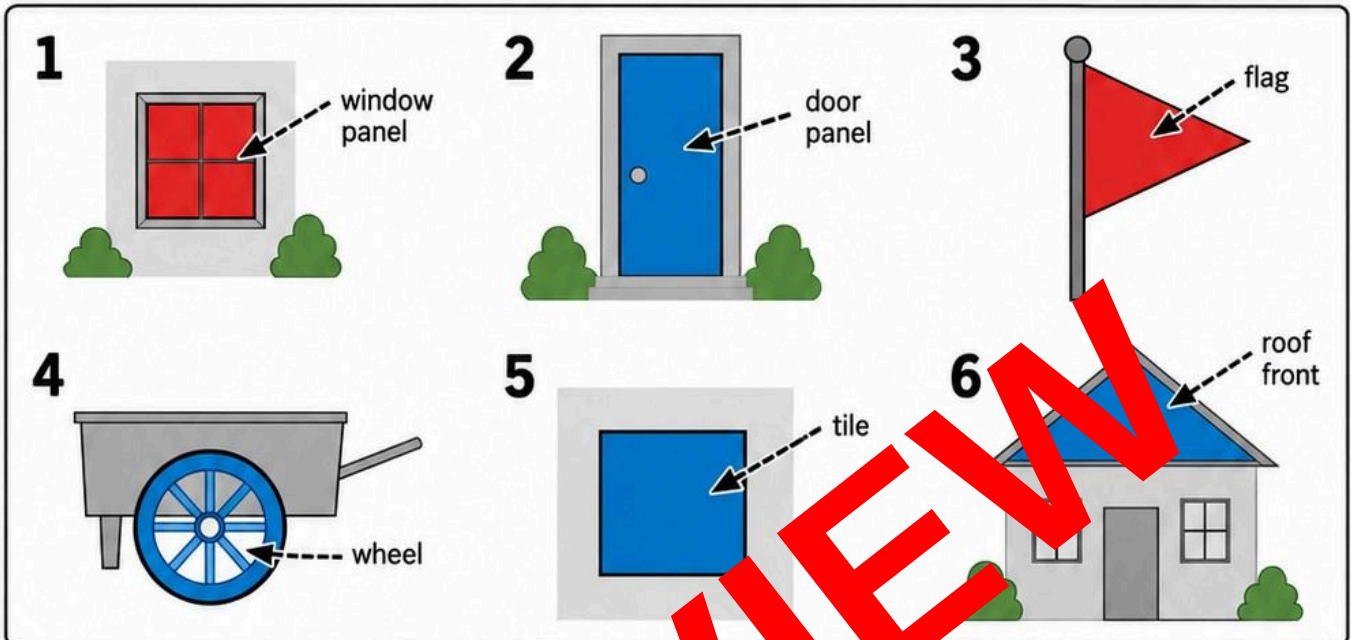
I can show: **The poster has 4 equal sides and 4 square corners.**

Students choose. Use pieces, drawing, pointing or dictation.  
Adults may prepare cuts or place chosen pieces.

Name: \_\_\_\_\_

# Regroup the parts

Look at the pictures and the number bank. Each picture has one part with a shape.  
Use the new rule to sort the numbers.



**First rule: 4 straight sides**

4 straight sides

Other

**New rule: colour**

Red

Blue

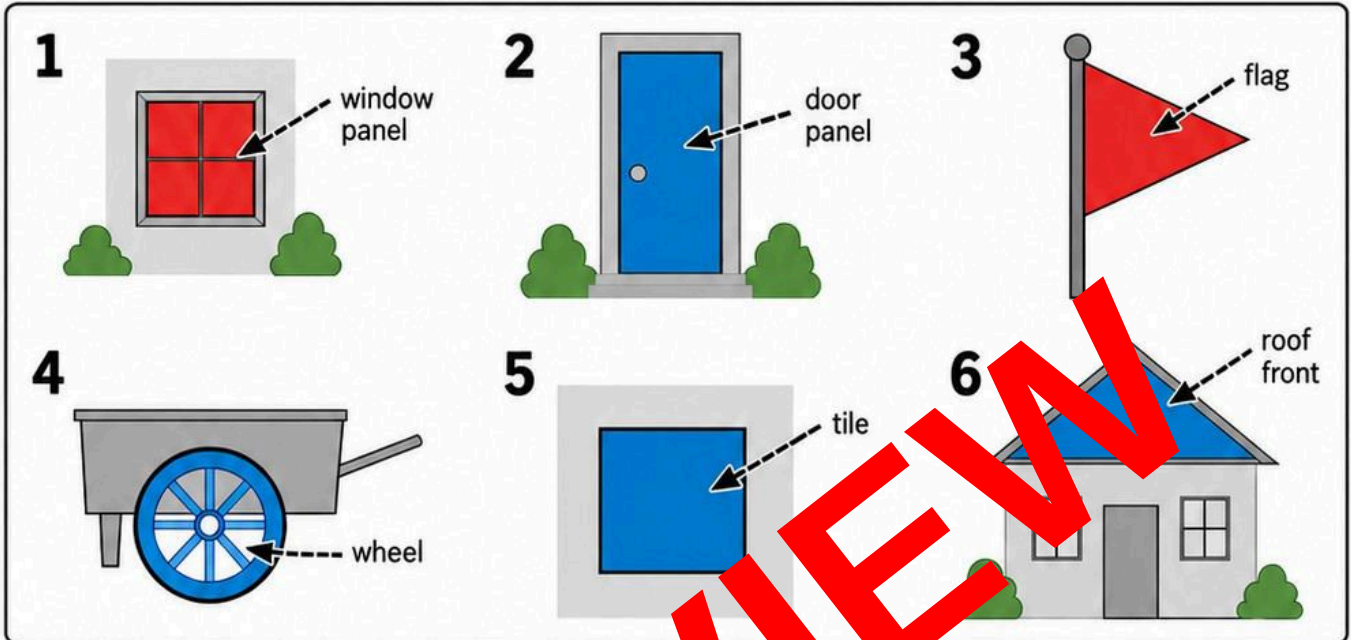
A new rule can change the groups. Colour does not name a shape.  
Adults may read and record your choice.

☐

Name. ANSWERS

## Regroup the parts

Look at the pictures and the number bank. Each picture has one part with a shape.  
Use the new rule to sort the numbers.



### First rule: 4 straight sides

#### 4 straight sides

1, 2, 5

Window, door panel and tile have 4 straight sides.

#### Other

3, 4, 6

Flag and roof front have 3 straight sides; wheel has a curved boundary.

### New rule: colour

#### Red

1, 3

These marked parts are red.

#### Blue

2, 4, 5, 6

These marked parts are blue.

A new rule can change the groups. Colour does not name a shape.  
Adults may read and record your choice.

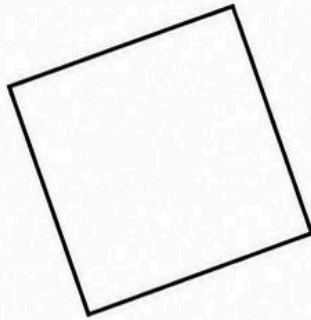
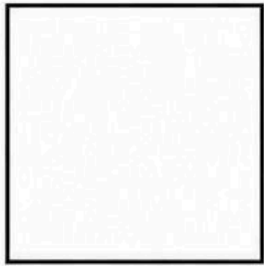


# Turned and sized parts

Name: \_\_\_\_\_

Look at each pair. Does its shape name change? Show what stays the same.

## 1. tile



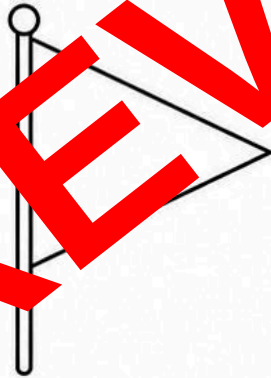
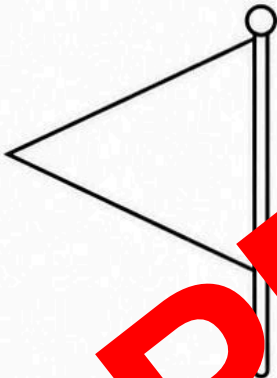
Name changes?

\_\_\_\_\_

Unchanged feature:

\_\_\_\_\_

## 2. pennant



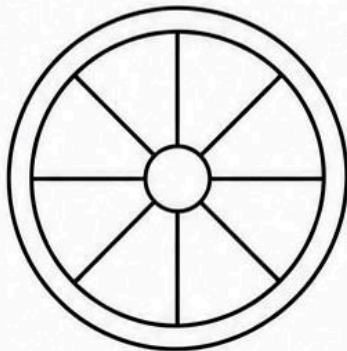
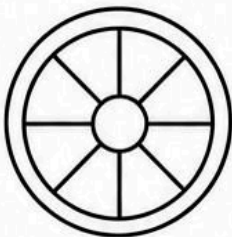
Name changes?

\_\_\_\_\_

Unchanged feature:

\_\_\_\_\_

## 3. wheel



Name changes?

\_\_\_\_\_

Unchanged feature:

\_\_\_\_\_

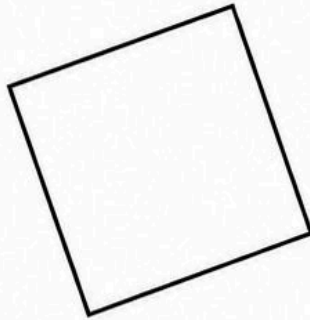
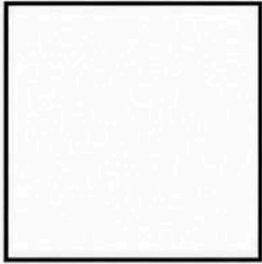
Point, say or dictate. An adult may record your choice.

# Turned and sized parts

Name: **ANSWERS**

Look at each pair. Does its shape name change? Show what stays the same.

## 1. tile



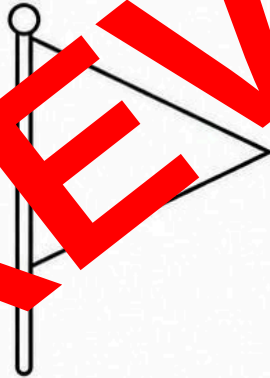
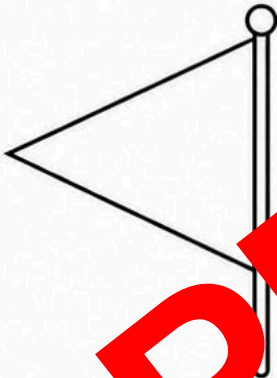
Name changes?

**No — still a square**

Unchanged feature:

**4 equal straight sides;  
4 square corners**

## 2. pennant



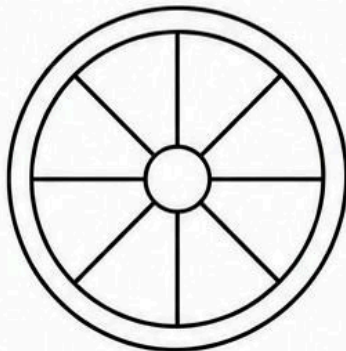
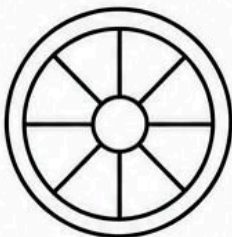
Name changes?

**No — still a triangle**

Unchanged feature:

**3 straight sides; 3 corners**

## 3. wheel



Name changes?

**No — still a circle**

Unchanged feature:

**Curved boundary;  
0 straight sides; 0 corners**

Point, say or dictate. An adult may record your choice.

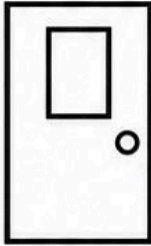
# Design a useful part

Name: \_\_\_\_\_

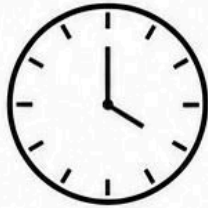
Make a front picture of a classroom.

Use at least 3 shapes from at least 2 families for named parts.

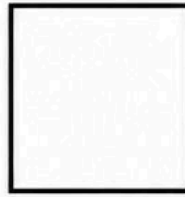
Point to one part. Name its shape. Show a feature.



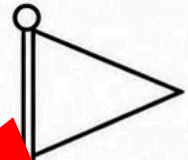
door



clock face



poster



flag

**PREVIEW**

My chosen part: \_\_\_\_\_

Its shape: \_\_\_\_\_

My feature reason: \_\_\_\_\_

Use pieces, drawing, pointing or dictation. Adults may place or record what the student chooses. Different valid pictures can work.

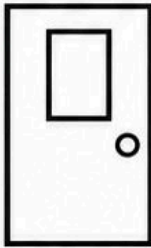
# Design a useful part

Name: ANSWERS

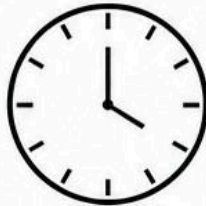
Make a front picture of a classroom.

Use at least 3 shapes from at least 2 families for named parts.

Point to one part. Name its shape. Show a feature.



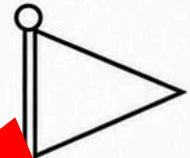
door



clock face

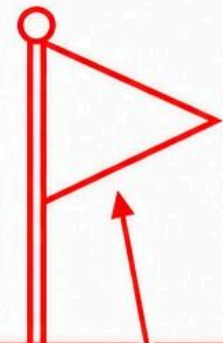
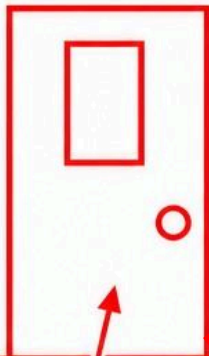


poster



flag

## One valid example



door  
rectangle  
4 square corners

clock face  
circle  
curved boundary

poster  
square  
4 equal sides  
4 square corners

flag  
triangle  
3 straight sides

Other true classroom parts and layouts can work. Check at least 3 shapes from 2 families, a named part and an accurate feature reason.

Do not grade artistic skill.

My chosen part: flag

Its shape: triangle

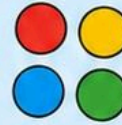
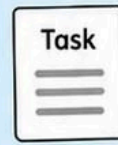
My feature reason: It has 3 straight sides and 3 corners.

Use pieces, drawing, pointing or dictation. Adults may place or record what the student chooses. Different valid pictures can work.

# Part detectives: sort and explain

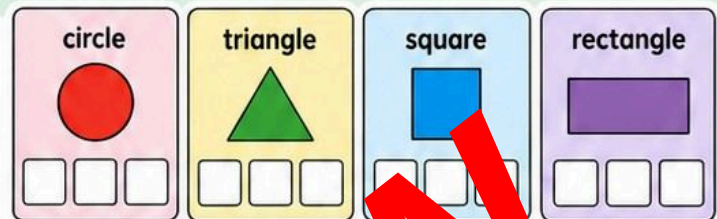
Kit 1 • about 10 minutes

**You need:** 12 part cards, 4 family mats, 6 task cards, 9 rule markers and the checking guide.



## Set up

Use the circle, triangle, square and rectangle mats.  
Keep all 3 slots on each mat empty.  
Put the 12 cards face down.  
Have the guide ready for checking after a response.



## Take a turn

- 1 Choose a card. An adult reads the task and the mark on the part name.
- 2 Name the shape of that part. Point to a feature.
- 3 Place the card. A partner checks with the guide after your choice.
- 4 If needed, trace the feature and try again. There is no penalty.



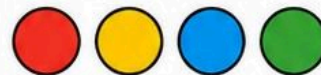
## Finish together

Finish when all cards are sorted and explained.



## Change the rule

Announce a new colour or feature rule. Set the family mats aside.  
Use the rule markers for groups on the table.  
A card may move when the rule changes.



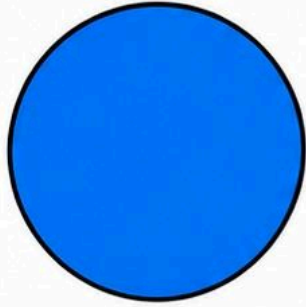
## Teacher note

A square is a special rectangle. These family mats sort squares separately from non-square rectangles.  
Colour does not name a shape.

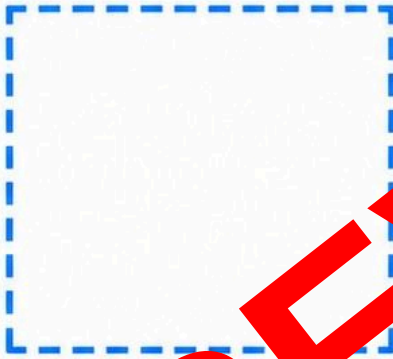
## Access

Students may point, speak or dictate.  
Adults can read, cut, handle pieces and record a student's choice. Keep mathematical choices with the student.

# Circle

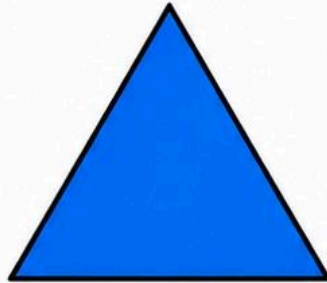


Curved boundary.  
0 straight sides.  
0 corners.

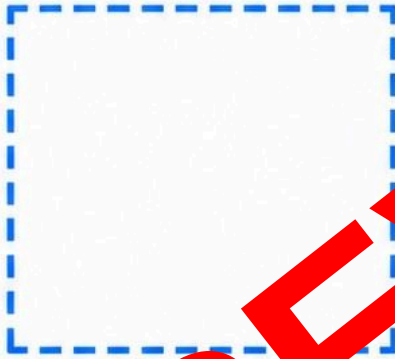


Name the marked part's shape. Show a feature. Place the card.

# Triangle

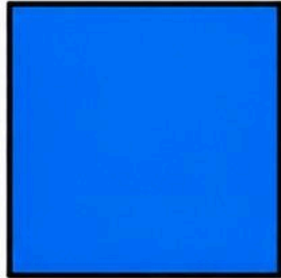


3 straight sides.  
3 corners.

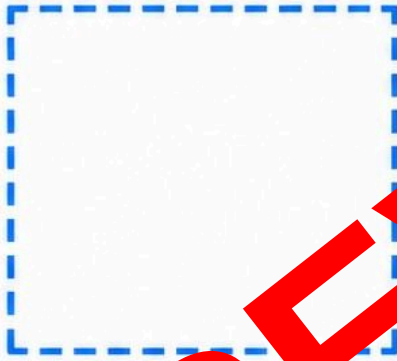


Name the marked part's shape. Show a feature. Place the card.

# Square



4 equal straight sides.  
4 square corners.

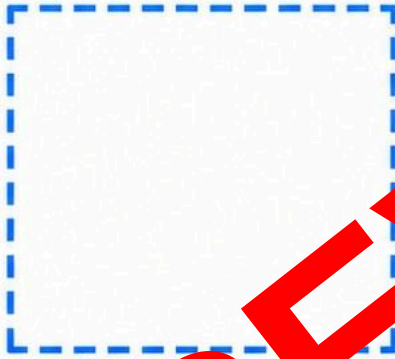


Name the marked part's shape. Show a feature. Place the card.

# Rectangle



4 square corners.  
2 longer sides.  
2 shorter sides

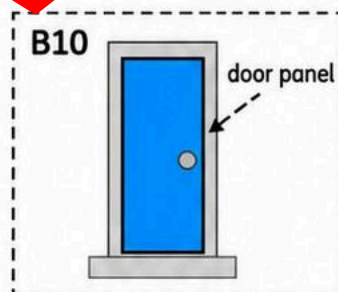
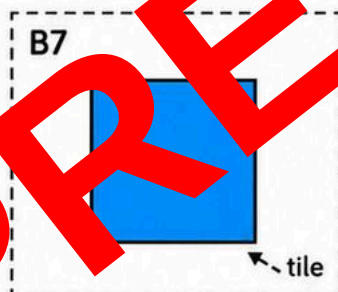
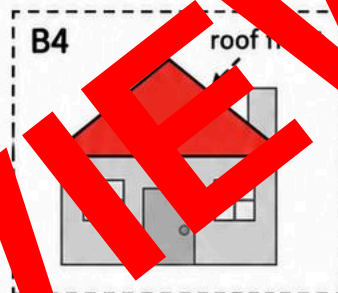
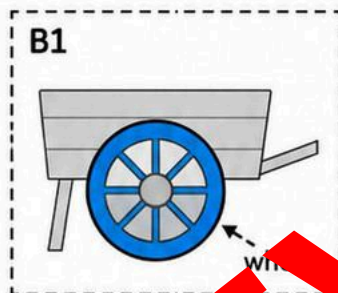


**Name the marked part's shape. Show a feature. Place the card.**

A square is a special rectangle. This mat uses non-square rectangles.

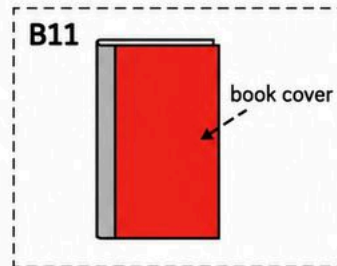
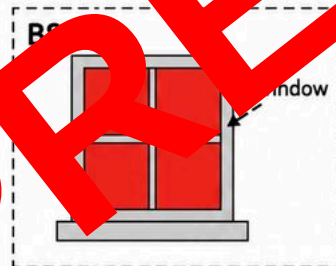
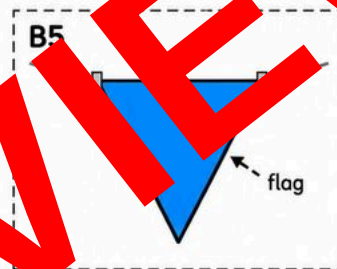
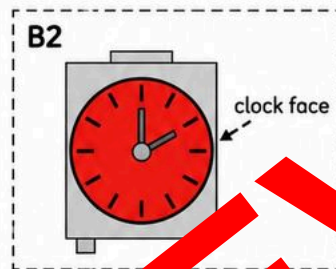
# Part cards — Sheet 1

Cut around the card borders. Adults may prepare the cards.



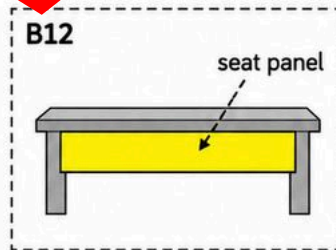
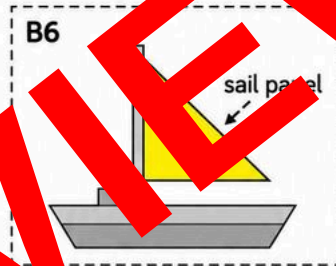
## Part cards — Sheet 2

Cut around the card borders. Adults may prepare the cards.



## Part cards — Sheet 3

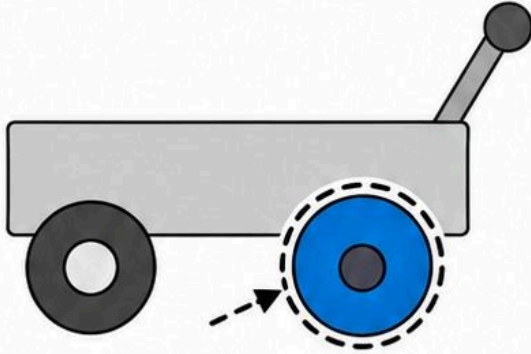
Cut around the card borders. Adults may prepare the cards.



# Part detective tasks

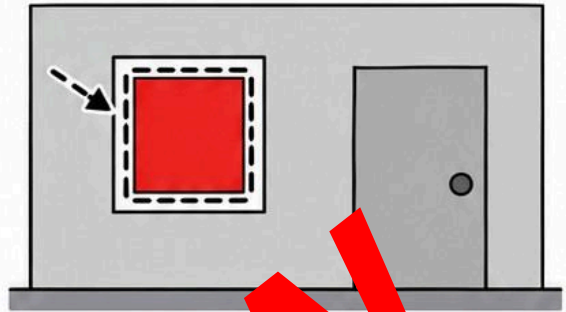
**1**

Pick a card. Name the marked part's shape. Show a feature.



**2**

Sort a part by shape family. Explain why it belongs.



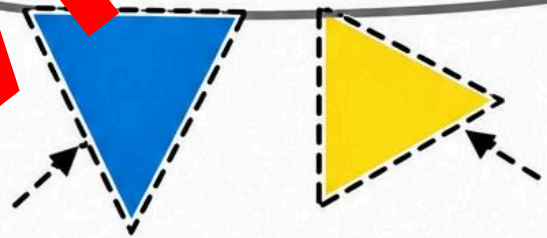
**3**

Find a part with a curved boundary only. Show that boundary.



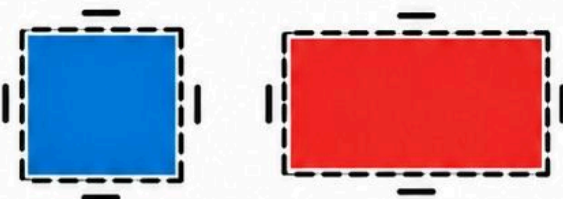
**4**

Find a triangle pointing a different way. Show its 3 straight sides.



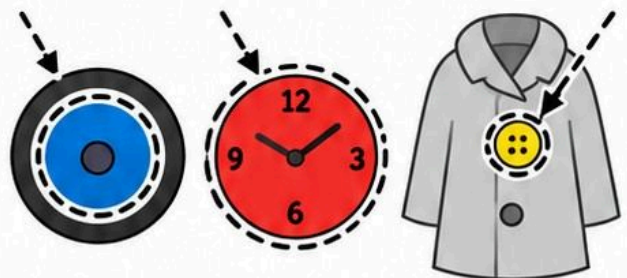
**5**

Make a group with 4 straight sides. Use squares and non-square rectangles. Show the sides.



**6**

Say the new colour rule. Sort the marked parts by red, blue or yellow.

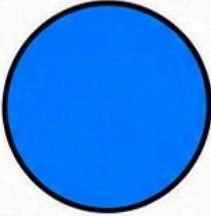
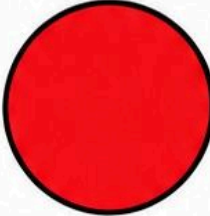
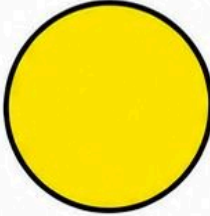
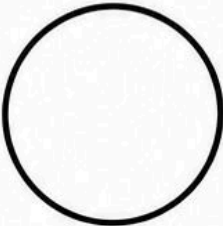
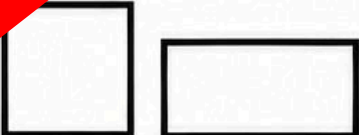
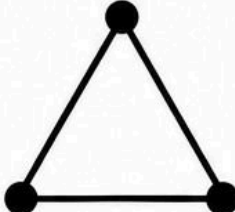
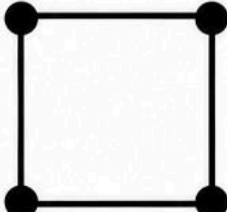


An adult reads. Students choose. Check with the guide after a response.



# Choose a sorting rule

An adult reads the rule. Students sort the marked parts.

|                                                                                                                   |                                                                                                             |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <br><b>Blue</b>                  | <br><b>Red</b>             | <br><b>Yellow</b>            |
| <br><b>Curved boundary only</b> | <br><b>straight sides</b> | <br><b>4 straight sides</b> |
| <br><b>Other</b>               | <br><b>3 corners</b>     | <br><b>4 corners</b>       |

Say the rule before sorting. Put family mats aside for a colour rule.

For a 3-corner and 4-corner rule, circles go in Other.

# Part detective checking guide

Use this guide to check student responses. The answers are in **red**.

| Shape family                                                                                           | Answer IDs         | Shape rule (features)                                |
|--------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------|
|  Circle               | <b>B1 B2 B3</b>    | Curved boundary only<br>0 straight sides / 0 corners |
|  Triangle             | <b>B4 B5 B6</b>    | 3 straight sides / 3 corners                         |
|  Square               | <b>B7 B8 B9</b>    | 4 equal straight sides / 4 square corners            |
|  Non-square rectangle | <b>B10 B11 B12</b> | 4 square corners / 2 longer 2 shorter sides          |

A square is a special rectangle. These mats separate squares from non-square rectangles.

| Colour rule |                     | Feature rules                                     |                 |
|-------------|---------------------|---------------------------------------------------|-----------------|
| Blue        | <b>B1 B5 B7 B10</b> | Curved boundary only                              | <b>B1 – B3</b>  |
| Red         | <b>B2 B4 B8 B11</b> | Straight sides                                    | <b>B4 – B12</b> |
| Yellow      | <b>B3 B6 B9 B12</b> | 4 straight sides                                  | <b>B7 – B12</b> |
|             |                     | Other (with 3 or 4 straight sides)                | <b>B1 – B6</b>  |
|             |                     | 3 corners                                         | <b>B4 – B6</b>  |
|             |                     | 4 corners                                         | <b>B7 – B12</b> |
|             |                     | Circle (B1 – B3) go in Other for 3/4 corner rule. |                 |

| Task checks |                                                                         |                                                                          |
|-------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>1</b>    | Name the action, mark the part and its feature.                         | Check the named shape and feature match the shape rule above.            |
| <b>2</b>    | Say the correct shape family and give a reason.                         | Check the family and reason match the shape rule above.                  |
| <b>3</b>    | Find one of B1 – B3 and state that it has a curved boundary.            | <b>B1, B2 or B3 – curved boundary only.</b>                              |
| <b>4</b>    | Find one of B4 – B6 and explain that turning it keeps 3 straight sides. | <b>B4, B5 or B6 – still 3 straight sides after a turn.</b>               |
| <b>5</b>    | Find one of B7 – B12 and show that it has 4 straight sides.             | <b>B7, B8, B9, B10, B11 or B12 – 4 straight sides.</b>                   |
| <b>6</b>    | Say the new colour rule and then use the colour groups to sort shapes.  | <b>Blue: B1 B5 B7 B10<br/>Red: B2 B4 B8 B11<br/>Yellow: B3 B6 B9 B12</b> |

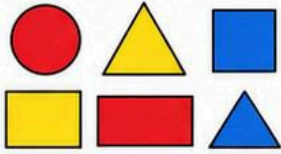
## Access and teaching note

An adult can read, handle or record. Student chooses. Ask about the marked part, not the whole object. Check after response. If colour or turning misleads, trace the boundary and retry.

# Build a familiar place

Use the shapes to make a picture. Follow the steps and take turns.

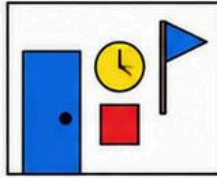
## You need:



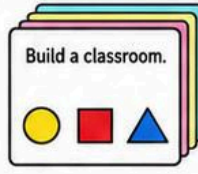
12 shape cutouts



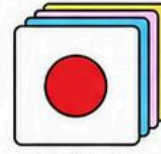
blank creation mat



model page



6 task cards

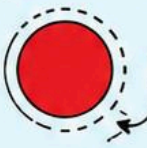


response-choice cards



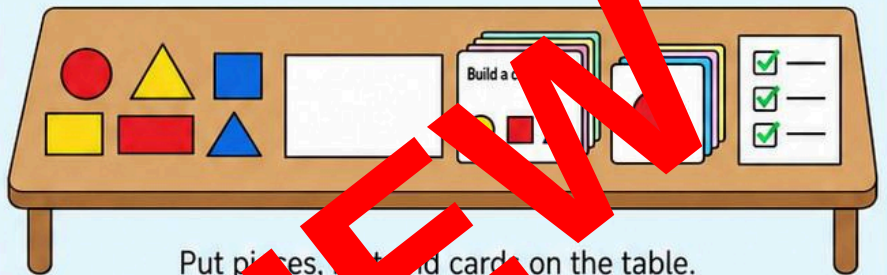
checking guide

## Prepare:



Leave tiny  
IDs behind.

Adults may cut the actual  
shape outlines, not the  
rectangular panels.



Put pieces, task cards and cards on the table.

## Every task:

Start or change a picture with at least  
3 pieces from at least 2 shape families.  
Make a classroom or outdoor from view  
picture. Other true pictures are welcome.

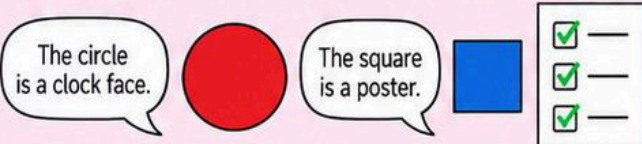


## Each turn:

- 1 An adult reads a task.
- 2 Student chooses a piece and names its shape.
- 3 Student chooses the part it will represent and places it.
- 4 Student points to or describes a visible shape feature.
- 5 Turn or change a piece if the task asks.

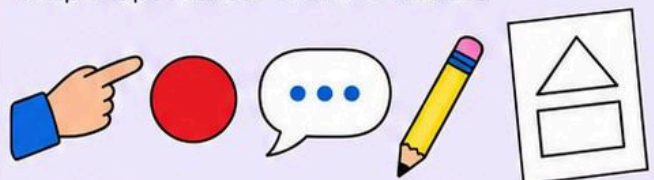
## Finish:

Complete the task and show the required feature.  
Name two intended parts.  
Check after responding.  
Play for about 10 minutes, then choose another task.



## Access:

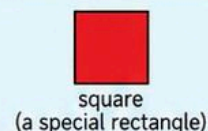
Students may point, place, draw, speak or dictate.  
Adults can read, cut, handle or record;  
keep shape choices with the student.



## Remember:

A turn does not change a shape family.  
Art skill is not scored.

A square is a special rectangle; this kit uses a separate non-square rectangle group.



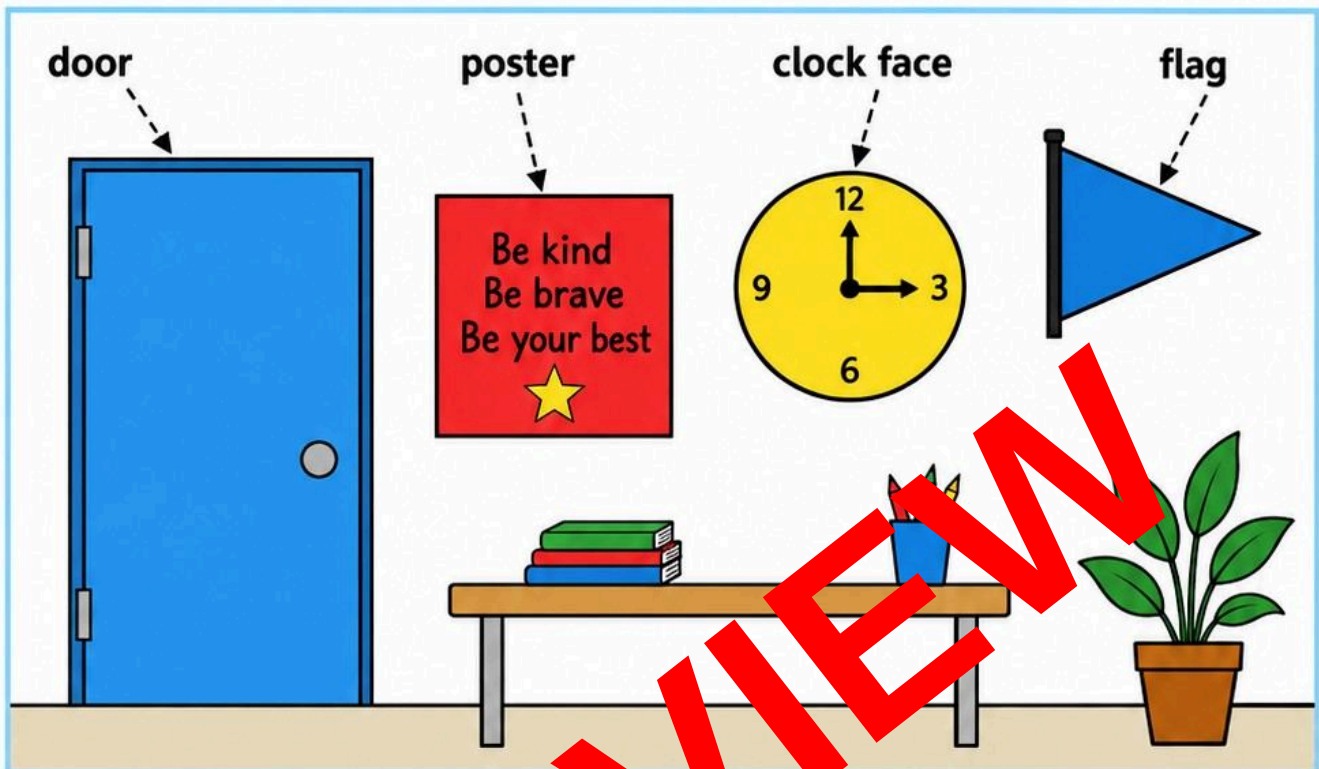
square  
(a special rectangle)



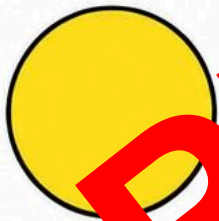
non-square  
rectangle

# One classroom picture

One valid example — other true pictures can work.



**Circle**



A curved boundary only.

**Triangle**



3 straight sides and 3 corners.

**Square**



4 equal straight sides and 4 square corners.

**Non-square rectangle**



4 straight sides (2 longer and 2 shorter) and 4 square corners.

**Rectangle door:** 4 square corners.

**Square poster:** 4 equal straight sides and 4 square corners.

**Circle clock face:** a curved boundary only.

**Triangle flag:** 3 straight sides and 3 corners.

**Choose at least 3** pieces from at least **2** families. Name the parts you mean.

Show a feature. A different accurate classroom or outdoor picture also works.

**Teacher note:** A square is a special rectangle. We use non-square rectangles as a separate group.

# Make a familiar place

Use at least 3 pieces from at least 2 shape families.



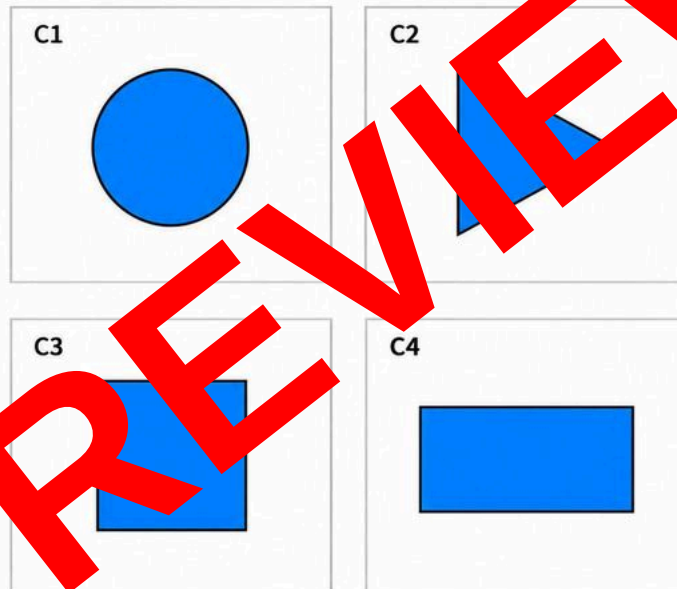
Name two parts. Show one shape feature.

Point, place, draw, speak or dictate.

An adult may prepare and handle your chosen pieces.

# Shape pieces — Sheet 1

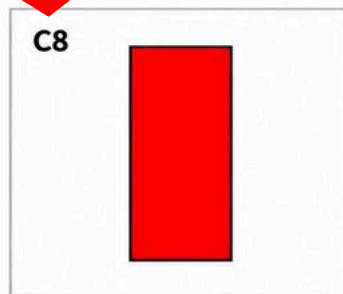
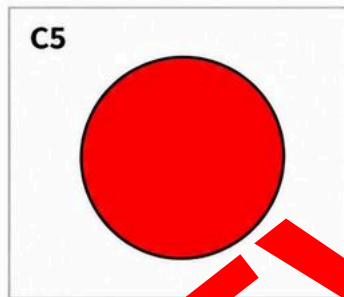
Cut around each shape outline. Leave the IDs behind.  
Adults may prepare the pieces.



Cut the shape, not the panel.

## Shape pieces — Sheet 2

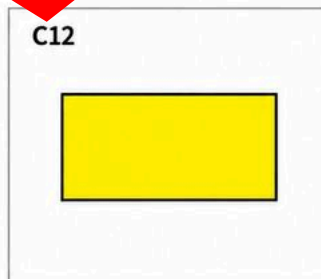
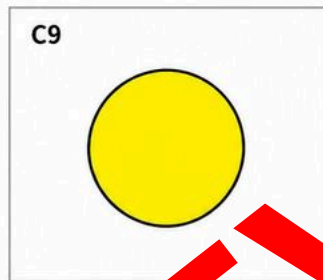
Cut around each shape outline. Leave the IDs behind.  
Adults may prepare the pieces.



Cut the shape, not the panel.

## Shape pieces — Sheet 3

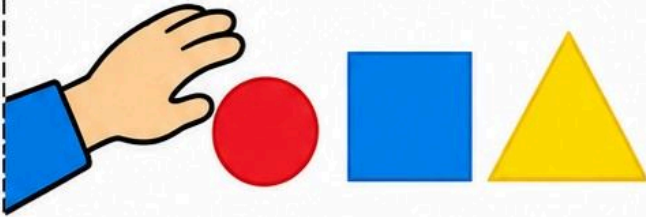
Cut around each shape outline. Leave the IDs behind.  
Adults may prepare the pieces.



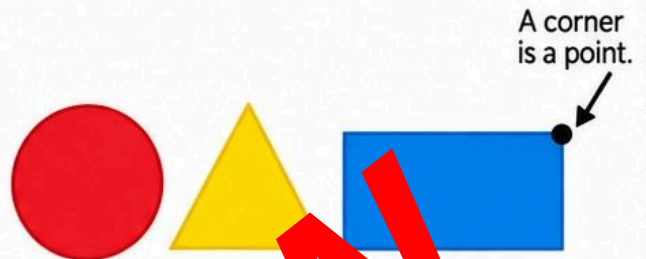
Cut the shape, not the panel.

# Build and explain

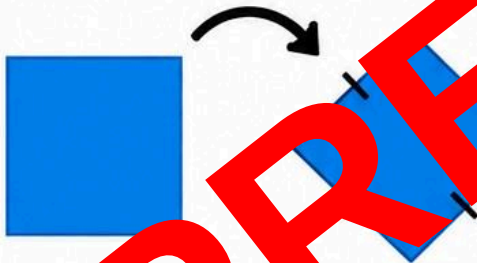
- 1** Build a classroom picture.  
Use at least 3 pieces from  
at least 2 families.  
Name two parts.



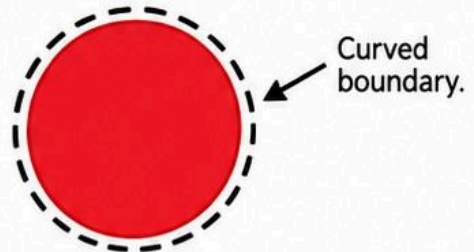
- 2** Build an outdoor picture.  
Use at least 3 pieces from  
at least 2 families.  
Show one shape feature.



- 3** Start with 3 pieces from  
2 families.  
Turn a square. Keep its name.  
Show its equal sides.



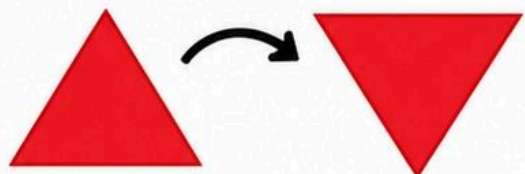
- 4** Start with 3 pieces from  
2 families.  
Use a circle as a wheel or  
clock face.  
Show its curved boundary.



- 5** Start with 3 pieces from  
2 families.  
Add a non-square rectangle  
as a named part.  
Show its 4 square corners.



- 6** Start with 3 pieces from  
2 families.  
Replace a triangle with one  
pointing a different way.  
Explain why both are triangles.

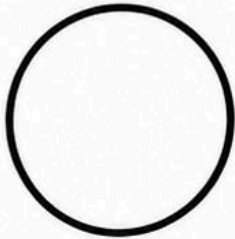


Other accurate pictures are welcome. Adults read; students choose.

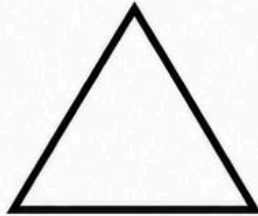
# Choose words or point

An adult reads. Students point, place, speak or dictate.

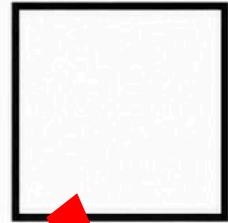
**Circle**



**Triangle**



**Square**



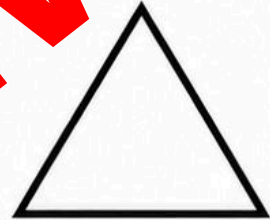
**Non-square  
rectangle**



**Curved boundary**



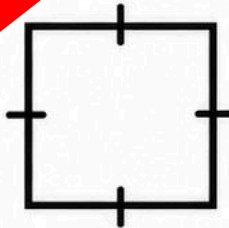
**3 straight sides**



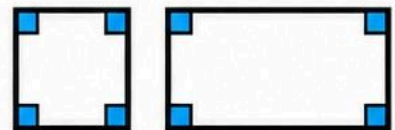
**4 straight sides**



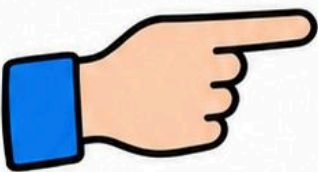
**4 equal sides**



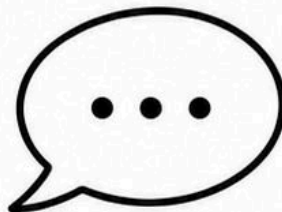
**4 square corners**



**I used...**



**This part is...**



**I can show...**



**Name the shape. Name the part you mean. Show a feature.**

# Build and explain — checking guide

| Shape name and key features (exact bank) |                                                                                     |
|------------------------------------------|-------------------------------------------------------------------------------------|
| Circle                                   | Circle: C1, C5, C9 — curved boundary only.                                          |
| Triangle                                 | Triangle: C2, C6, C10 — 3 straight sides, 3 corners.                                |
| Square                                   | Square: C3, C7, C11 — 4 equal straight sides, 4 square corners.                     |
| Non-square rectangle                     | Non-square rectangle: C4, C8, C12 — 4 square corners; 2 longer and 2 shorter sides. |

A square is a special rectangle. We use separate categories for square and non-square rectangle in this activity.

**One valid classroom example**

door (rectangle)   poster (square)   clock face (circle)   flag (triangle)

**One valid outdoor example**

sign (circle)   sign board (square)   flag (triangle)

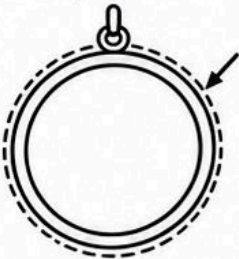
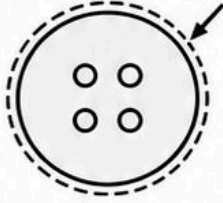
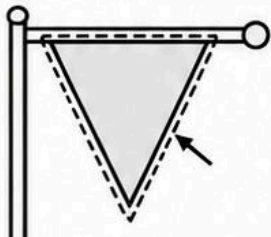
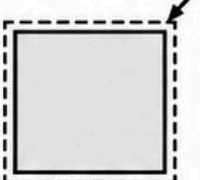
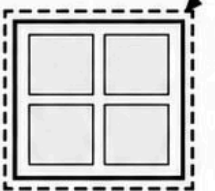
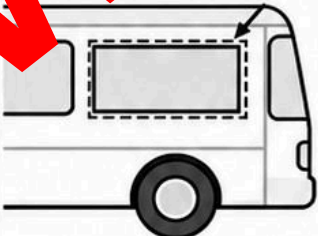
| Task                           | Check                                                                                                                                              | Expected answer / key features                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Classroom build and explain | Uses at least 3 pieces from the kit. Includes at least 2 different shape families. Names 2 parts of the build.                                     | At least 3 pieces used.<br>At least 2 shape families.<br>Two named parts, for example: door (rectangle), poster (square), clock face (circle), flag (triangle).                                               |
| 2. Outdoor build and explain   | Uses at least 3 pieces from the kit. Includes at least 2 different shape families. Shows 1 feature of a named part.                                | At least 3 pieces used.<br>At least 2 shape families.<br>One feature stated, for example: the sign is a circle because it has a curved boundary.                                                              |
| 3. Turned square               | Starts with 3 pieces from the kit, at least 2 shape families. Turns a square and explains what stays the same.                                     | At least 3 pieces used.<br>At least 2 shape families.<br>A turned square still has 4 equal straight sides and 4 square corners.                                                                               |
| 4. Circle in context           | Starts with 3 pieces from the kit, at least 2 shape families. Uses a circle as a wheel or clock face and explains why it is a circle.              | At least 3 pieces used.<br>At least 2 shape families.<br>The wheel or clock face is a circle because it has a curved boundary only.                                                                           |
| 5. Add a non-square rectangle  | Starts with 3 pieces from the kit, at least 2 shape families. Adds a non-square rectangle, names the intended part and shows its 4 square corners. | At least 3 pieces used to start, then a non-square rectangle added.<br>Names the intended part, for example: door, window or sign board.<br>Shows 4 square corners (for example, by pointing to the corners). |
| 6. Replace the triangle        | Starts with 3 pieces from the kit, at least 2 shape families. Replaces a triangle and explains the key feature.                                    | At least 3 pieces used.<br>At least 2 shape families.<br>The replaced triangle still has 3 straight sides and 3 corners.                                                                                      |

- Other accurate pictures qualify. Art skill is not scored. Assess shape choices and named-part reasons.
- Accept square plus non-square rectangle as two kit families, while clarifying broader rectangle reasoning.
- Adult reading, cutting, handling or recording is access; record mathematical hints separately.

# New shape parts

Name: \_\_\_\_\_

**Adult reads:** Look at each marked part. Sort by shape. Point, say or write the numbers. Then name one from each group.

|                                                                                                                      |                                                                                                       |                                                                                                            |                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>1</b> hoop outline<br>           | <b>2</b> button<br>  | <b>3</b> pennant<br>     | <b>4</b> park roof front<br> |
| <b>5</b> recycling-label panel<br> | <b>6</b> window<br> | <b>7</b> book cover<br> | <b>8</b> window panel<br>   |

**Circle**

**Triangle**

**Square**

**Non-square rectangle**

Adult may read the part names and record chosen responses. Do not name the shapes for the student.

# My outdoor picture

Name: \_\_\_\_\_

Make a playground or outdoor picture. Use at least 3 shapes from at least 2 families.

**PREVIEW**

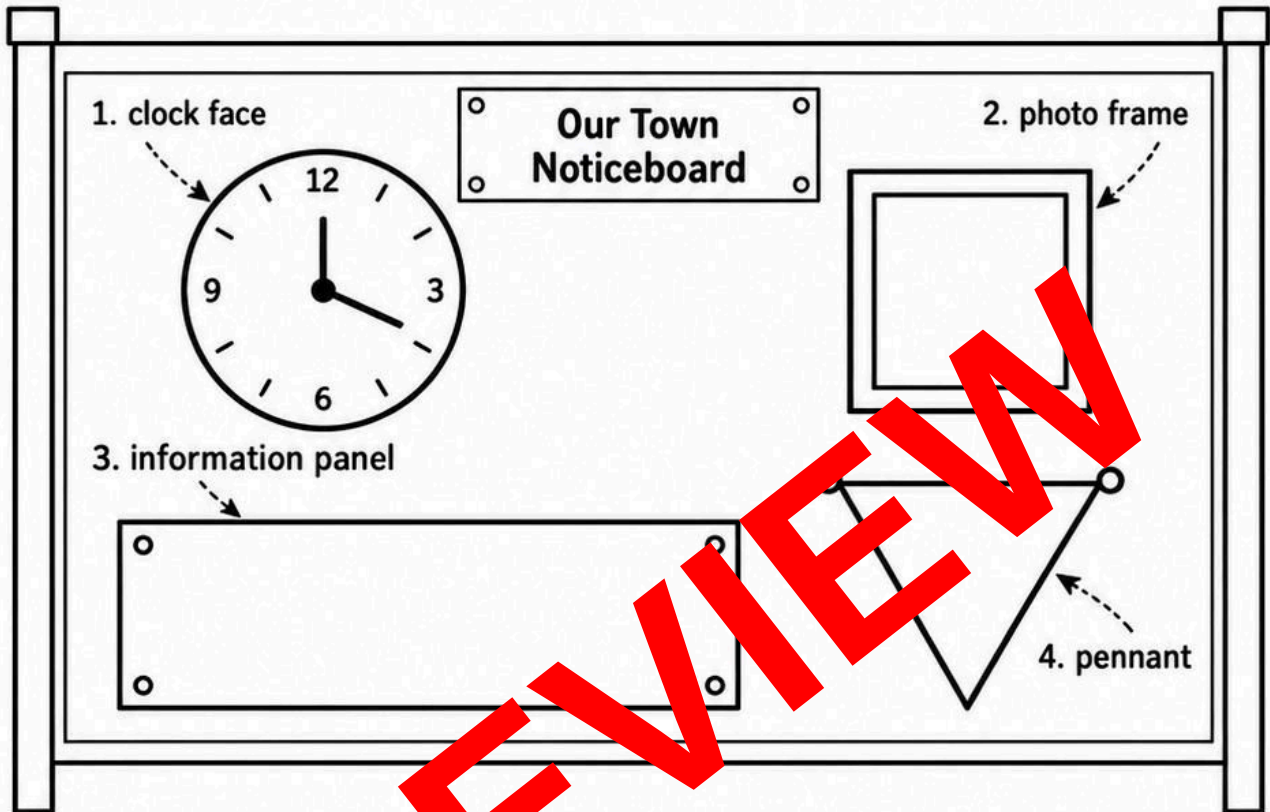
Name two parts. Show one shape feature and explain your match.

Point, place, draw, speak or dictate.  
An adult may cut, handle or record your choices.

# Town-board shape parts

Name: \_\_\_\_\_

An adult reads: Name the marked part's shape. Show a feature. Explain one match.



**1. clock face**

Shape: \_\_\_\_\_ Feature: \_\_\_\_\_

**2. photo frame**

Shape: \_\_\_\_\_ Feature: \_\_\_\_\_

**3. information panel**

Shape: \_\_\_\_\_ Feature: \_\_\_\_\_

**4. pennant**

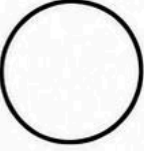
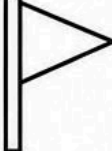
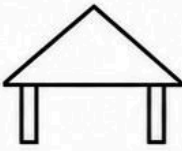
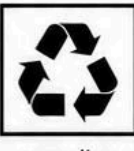
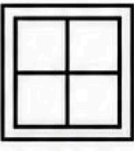
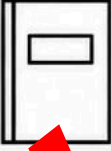
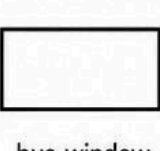
Shape: \_\_\_\_\_ Feature: \_\_\_\_\_

**One match:** I chose this shape because... \_\_\_\_\_

An adult may read the part names, handle or record. Student chooses the shape and feature.

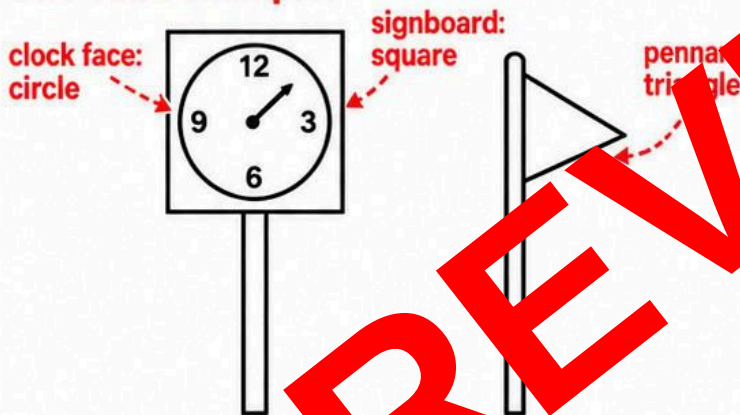
# New learning – marking guide

## Part 1: SORT AND NAME

|                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                              |                                                                                    |                                                                                                             |                                                                                     |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Circle:</b> 1 hoop outline, 2 button — curved boundary only, 0 straight sides/0 corners. |                                                                                   | <b>Triangle:</b> 3 pennant, 4 park roof front — 3 straight sides, 3 corners.      |                                                                                   | <b>Square:</b> 5 recycling-label panel, 6 window — 4 equal straight sides, 4 square corners. |                                                                                    | <b>Non-square rectangle:</b> 7 book cover, 8 bus-window panel — 4 square corners, 2 longer 2 shorter sides. |                                                                                     |
| 1                                                                                           | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                            | 6                                                                                  | 7                                                                                                           | 8                                                                                   |
|            |  |  |  |             |  |                          |  |
| hoop                                                                                        | button                                                                            | pennant                                                                           | park roof front                                                                   | recycling-label panel                                                                        | window                                                                             | book cover                                                                                                  | bus-window panel                                                                    |

## Part 2: OUTDOOR CREATION

One valid example:

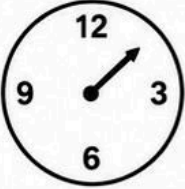
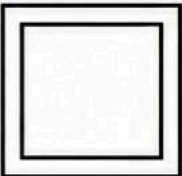
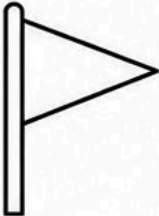


Criteria:

At least 3 shapes from at least 2 families.  
Student names 2 intended parts and shows 1 visible feature to justify a match.

Other accurate outdoor pictures qualify.  
Drawing, placement, pointing, speech or dictation are valid. Art skill/engineering realism are not scored.

## Part 3: HOW BOARD KEY

|                                                                                     |                                                                                     |                                                                                             |                                                                                      |                                                                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Clock face:</b> circle — curved boundary only, 0 straight sides/0 corners.       | <b>Photo frame:</b> square — 4 equal straight sides/4 square corners.               | <b>Information panel:</b> non-square rectangle — 4 square corners/2 longer 2 shorter sides. | <b>Pennant:</b> triangle — 3 straight sides/3 corners.                               | <b>Reason example:</b><br>The pennant is a triangle because its boundary has 3 straight sides. |
|  |  |          |  |                                                                                                |

### Teacher assessment:

Record naming, sorting, creating, named parts and reason separately.  
Accept mathematically true broader rectangle reasoning for a square; clarify special equal-sided name.

### Next steps:

- Whole object answer: mark one component.
- Colour-only answer: trace boundary, announce rule.
- Turn changes name: turn and check features.
- Missing creation/reason: reteach that action, do not average it away.
- Adult reading/cutting/handling/recording is access.
- Record shape hints separately.

# Shape learning – observation

Record three students. Use another copy for three more.

|               |          |                     |
|---------------|----------|---------------------|
| Name: _____   |          | Context/date: _____ |
| Learning area | Evidence | Content prompt?     |
| Naming        |          |                     |
| Sorting       |          |                     |
| Creating      |          |                     |
| Named part    |          |                     |
| Reason        |          |                     |
| Access used:  |          |                     |
| Next step:    |          |                     |

|               |          |                     |
|---------------|----------|---------------------|
| Name: _____   |          | Context/date: _____ |
| Learning area | Evidence | Content prompt?     |
| Naming        |          |                     |
| Sorting       |          |                     |
| Creating      |          |                     |
| Named part    |          |                     |
| Reason        |          |                     |
| Access used:  |          |                     |
| Next step:    |          |                     |

|               |          |                     |
|---------------|----------|---------------------|
| Name: _____   |          | Context/date: _____ |
| Learning area | Evidence | Content prompt?     |
| Naming        |          |                     |
| Sorting       |          |                     |
| Creating      |          |                     |
| Named part    |          |                     |
| Reason        |          |                     |
| Access used:  |          |                     |
| Next step:    |          |                     |

Reading labels, cutting, handling or recording a chosen answer are access. A hint about the shape or rule is a content prompt. Record these separately.

# Shape learning rubric

| Area              | Emerging                                 | Developing                                 | Secure                                                                         | Extending                                                                |
|-------------------|------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>Naming</b>     | Needs an item-by-item shape content cue. | Names some shapes with a reminder.         | Independently names familiar 4 families (circle, triangle, square, rectangle). | Names shapes in new contexts after a turn or size change.                |
| <b>Sorting</b>    | Adult directs each group.                | Sorts some shapes with a content reminder. | Independently sorts by a given property.                                       | Changes rule and explains new groups.                                    |
| <b>Creating</b>   | Needs content cues for each choice.      | Builds some picture with shape cues.       | Independently makes a place with at least 3 pieces from 2 families.            | Transfers accurate pieces for a new place.                               |
| <b>Named part</b> | Names the whole object unless prompted.  | Identifies some parts with a reminder.     | Identifies and describes intended components with features.                    | Transfers part recognition to unfamiliar contexts.                       |
| <b>Reason</b>     | Copies reason for a content cue.         | Uses a feature with a content reminder.    | Independently uses a visible feature to explain a match.                       | Explains why a turn or size keep family or why a new rule changes group. |

## Judge all five areas separately.

Do not average strong naming/sorting into passing missing creation or reasoning.

Secure mathematics may include adult label reading, cutting, handling or recording.

Student makes the mathematical choices without content hints.

Reading, spelling, drawing skill, fine-motor precision or spoken sentences are not mathematics gates.

**Choose a next teaching step:** trace a boundary; compare two options; sort and explain; build a new picture; turn and recheck.

Student: \_\_\_\_\_

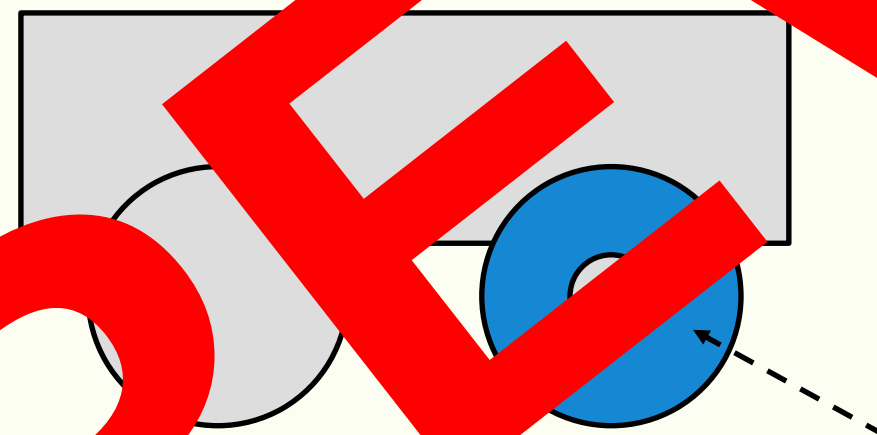
Next step: \_\_\_\_\_

# Shape Detectives Around Us Foundation



# A shape in a part

Look at the wheel's outside outline.  
The whole cart has many parts.

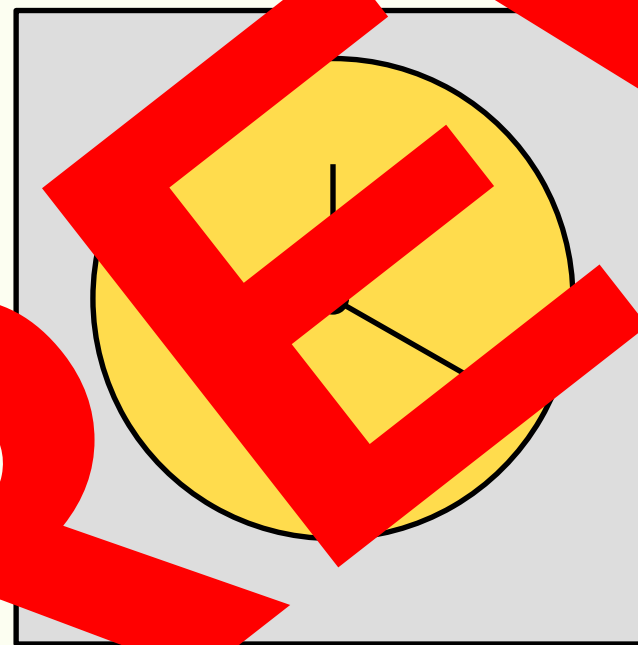


wheel outline



# A curved boundary

The clock face is a circle.  
Trace its curved boundary.

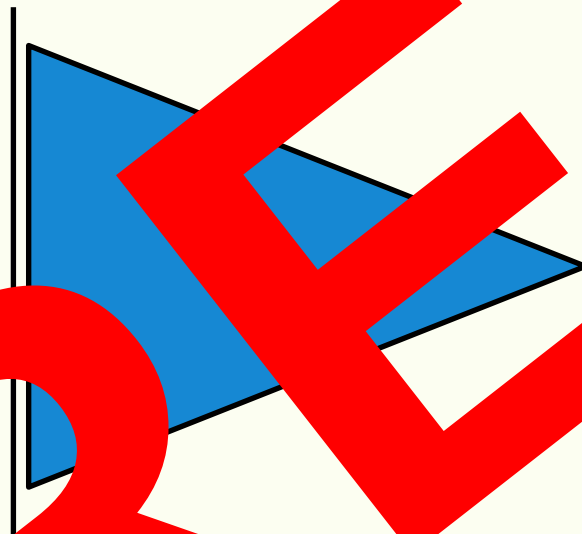


clock face



# Three straight sides

This flag is a triangle.  
Show its 3 straight sides and 3 corners.



flag

3 straight sides



# Squares and rectangles

Both have 4 square corners.  
A square also has 4 equal sides.

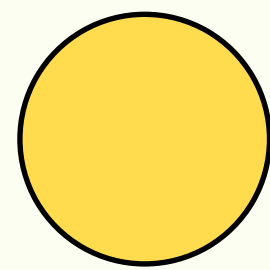


A square is also a special rectangle.

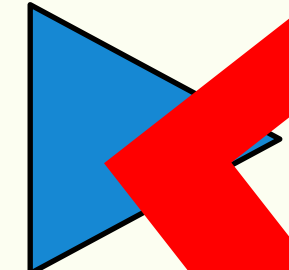


# Match the outline

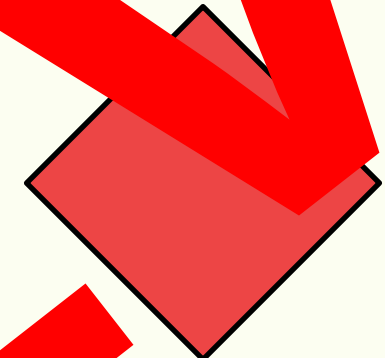
Match each named shape to an outline.  
A turn does not change a shape.



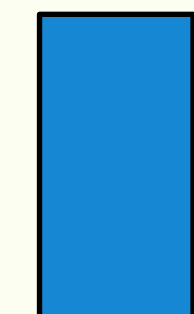
clock face



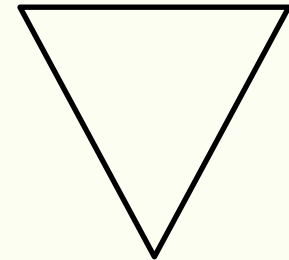
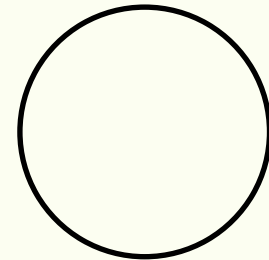
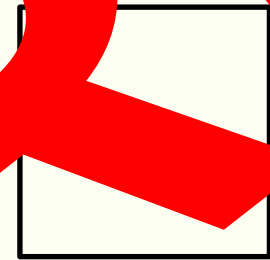
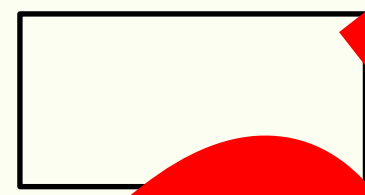
flag



tile

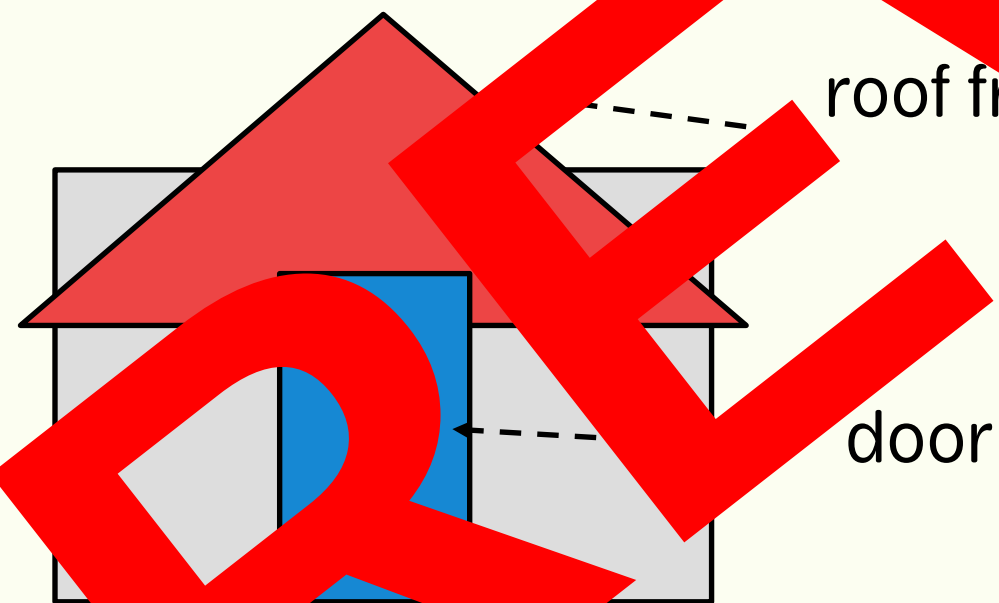


door panel



# Mark the part first

Choose one part. Point to its boundary.  
Then name its shape.

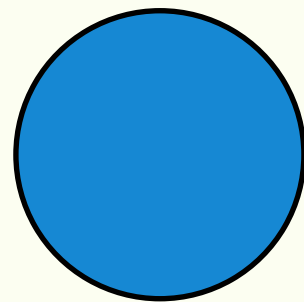


Point to one part first.

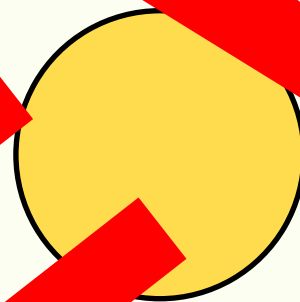


# Sort with a reason

The wheel outline and clock face go together.  
Both match a circle



wheel outline



clock face

Both have a curved boundary.



# Where does it belong?

Choose a marked part from the cards.  
Place it by family. Show why.

Circle

Triangle

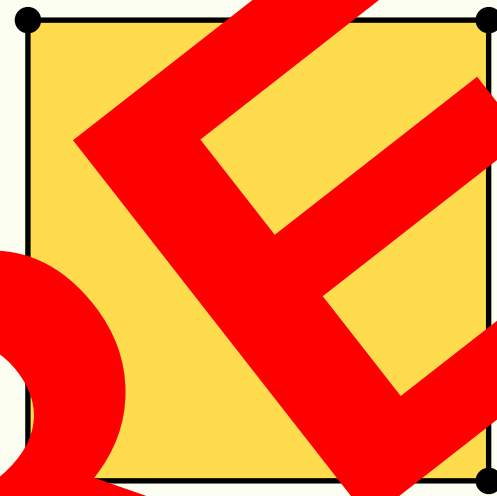
Square

Non-square  
rectangle



# Show a square

Trace the square poster's sides.  
Show its square corners.

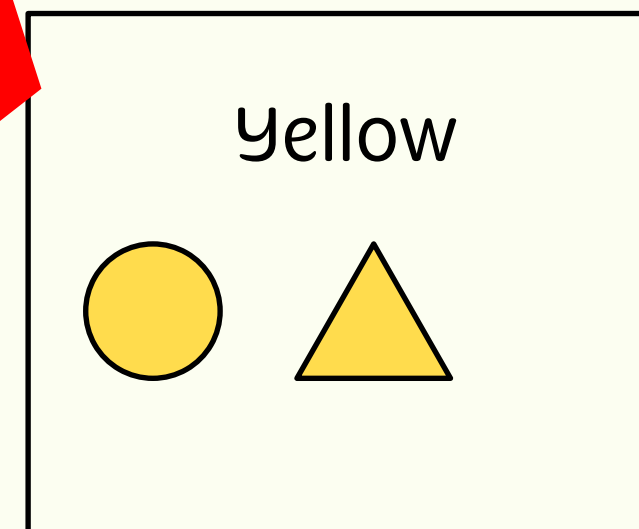
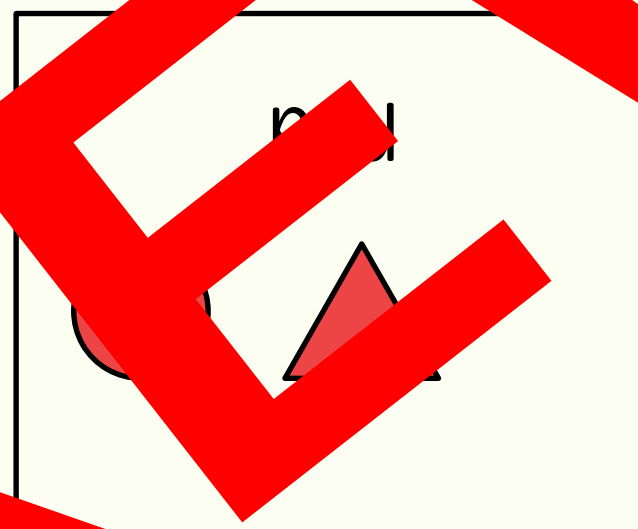
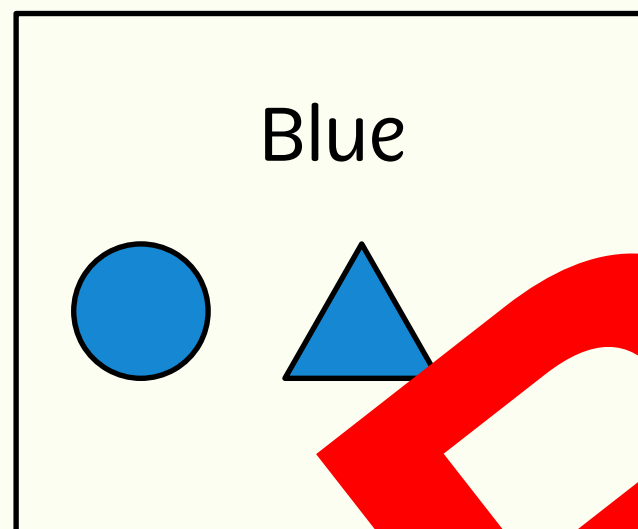


4 equal straight sides  
4 square corners



# Say a new rule

Now sort by the marked part colour.  
Say "blue", "red" or "yellow" first.



Different shapes can share a colour.



# Take a detective turn

Listen. Point to the part. Name and place it.  
Show a feature then check.

1 Listen

2 point

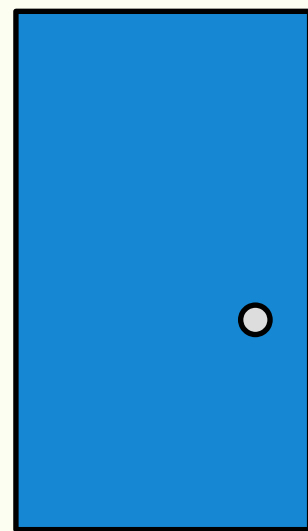
3 Place

4 Check



# Find a part near by

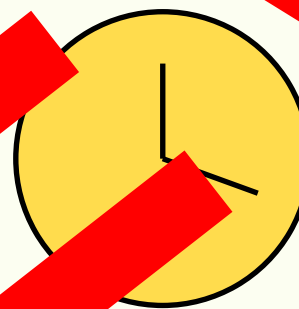
Look for a flat front outside.  
You can explore on the table too.



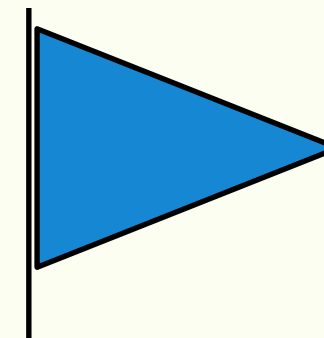
door



poster



clock face



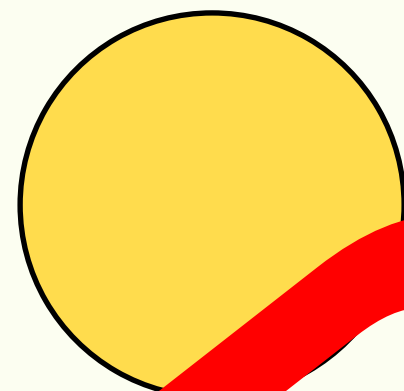
flag

Use a local walk or the table scene.

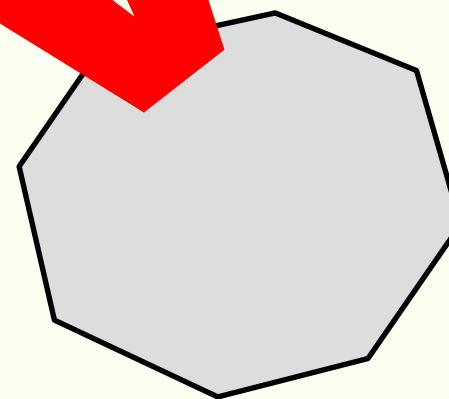


# Exact, or close to?

Clock face is a circle.  
Stone outline: close to circle.



Clock face is a circle

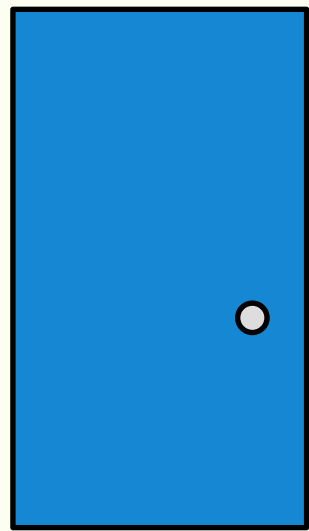


Stone outline: close



# Be a table detective

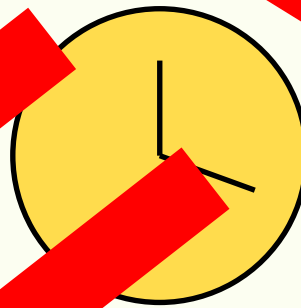
Choose a part in this classroom scene.  
Name its shape. Show a picture.



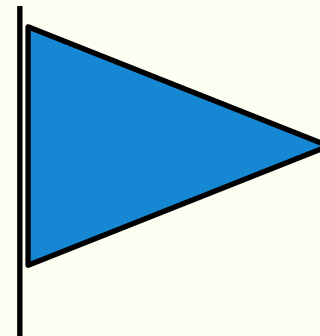
door



poster



clock face

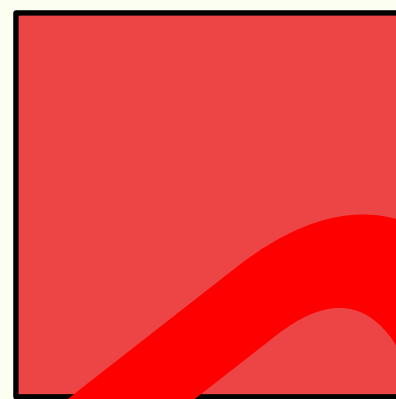


flag

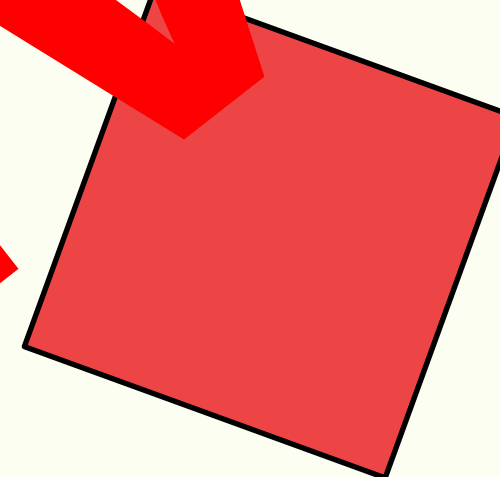


# Turn it. Keep its name

Turn the square poster.  
Its equal sides and square corners stay.



Before

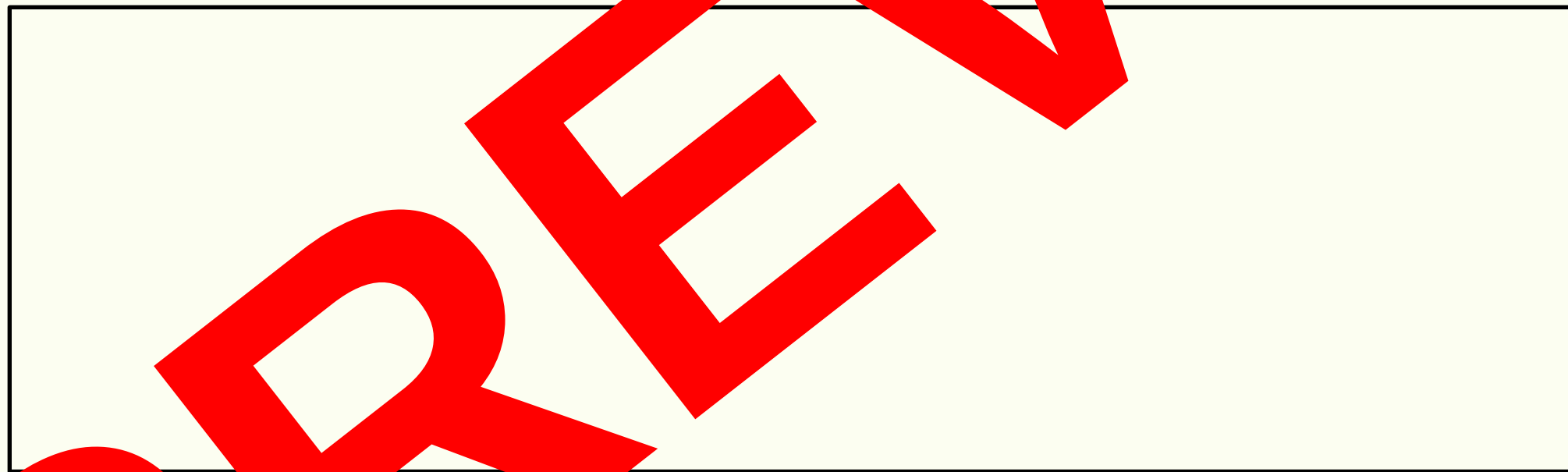


After a turn



# Build a familiar place

Choose 3 or more pieces from your families.  
Make a classroom or outdoor picture.

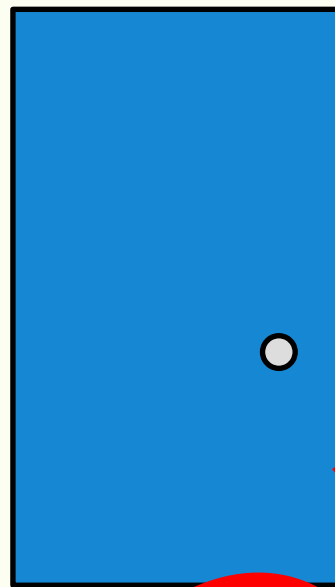


Your classroom or outdoor picture



# One classroom picture

A door, poster, clock face and flag.  
Name the parts and show the shape clues.



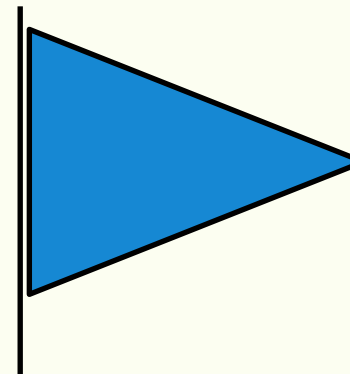
door



poster



clock face



flag



# Build and explain

Choose and place a piece on a surface.  
Name the part. Show a shape feature.

Choose

Place

Name the part

Show a feature



# Sort new marked parts

Choose a group for each new part.  
Name one part in each group.

Circle

Triangle

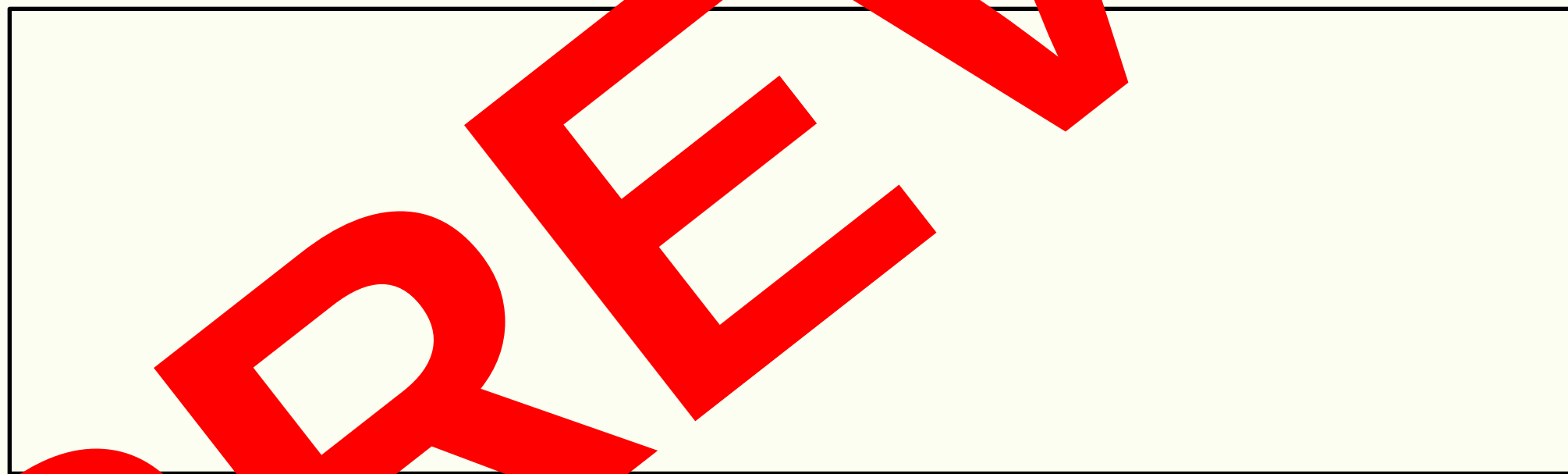
Square

Non-square  
rectangle



# Make a new outdoor picture

Use 3 or more shapes from 2 or more families.  
Name 2 parts. Show a shape code.

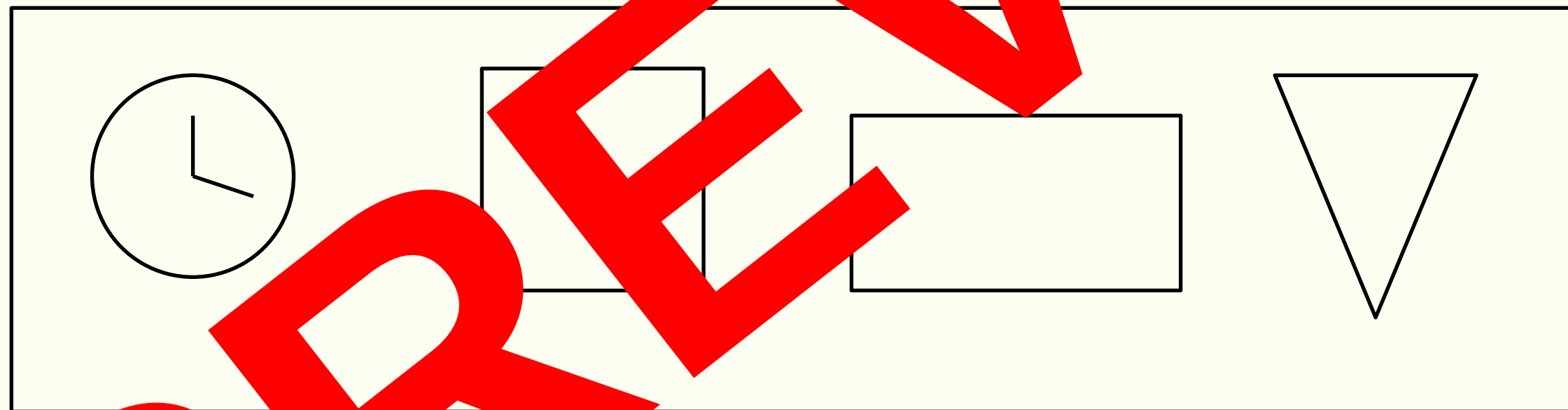


your new outdoor picture



# Explain a town-board part

Name each marked part's shape.  
Show a feature. Explain a match.



clock face

photo frame

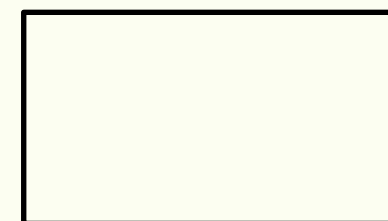
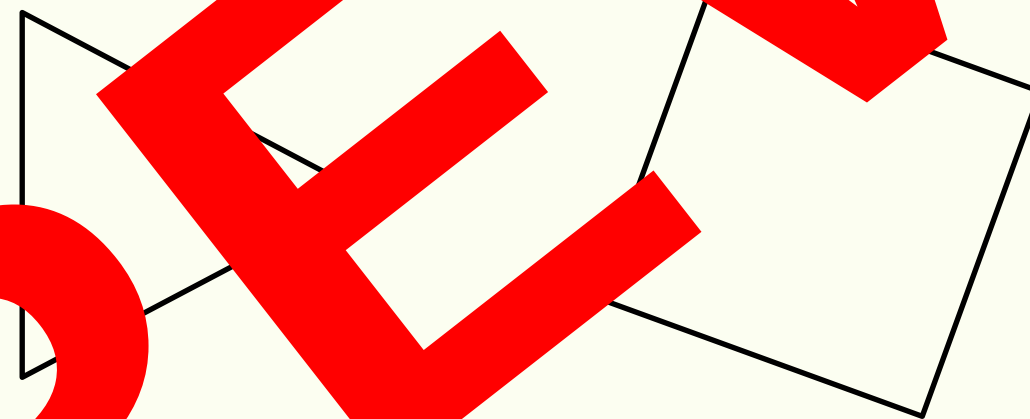
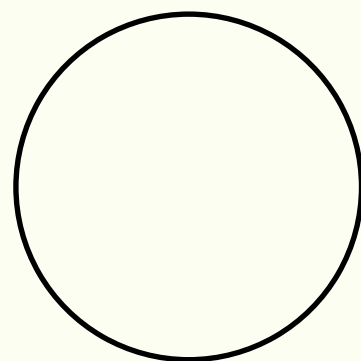
information  
panel

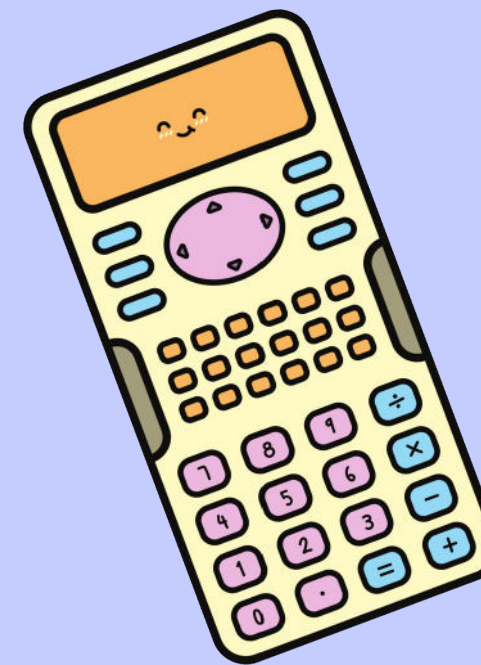
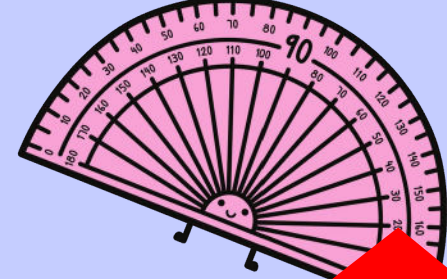
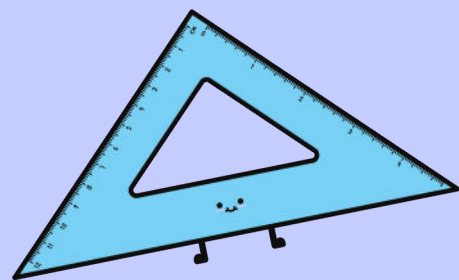
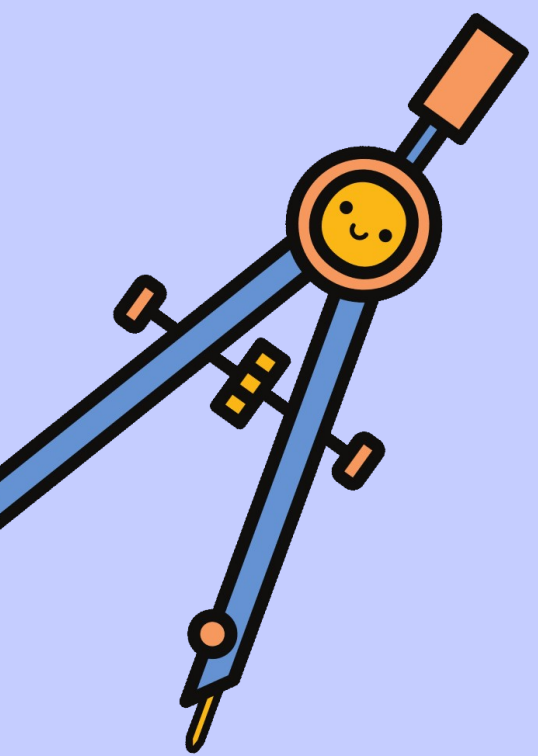
pennant



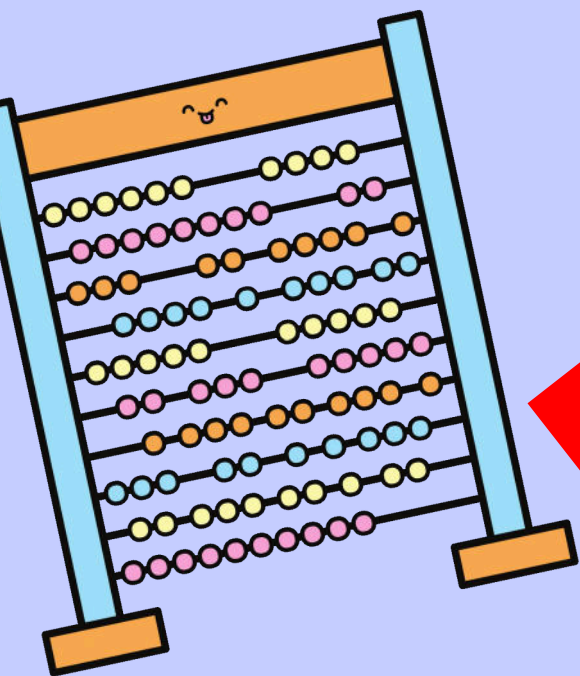
**Name it. Show your reason.**

Name these 4 shapes.  
Show a side, corner or curved boundary.

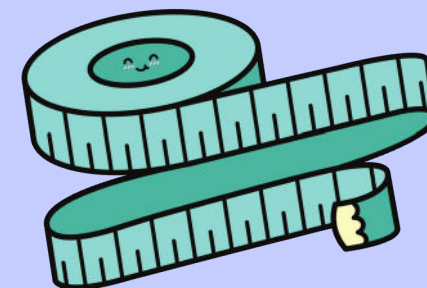
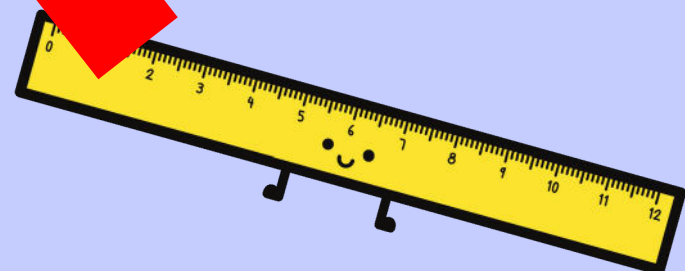




Great work!



PREVIEW

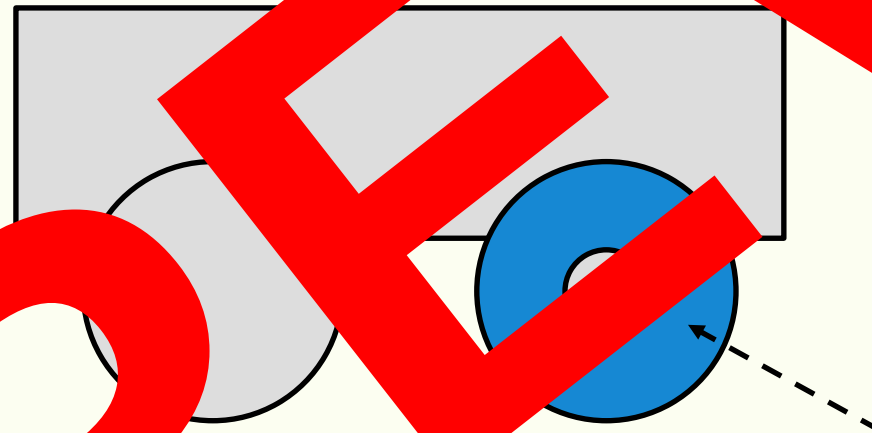


# Shape Detectives Quiz Foundation



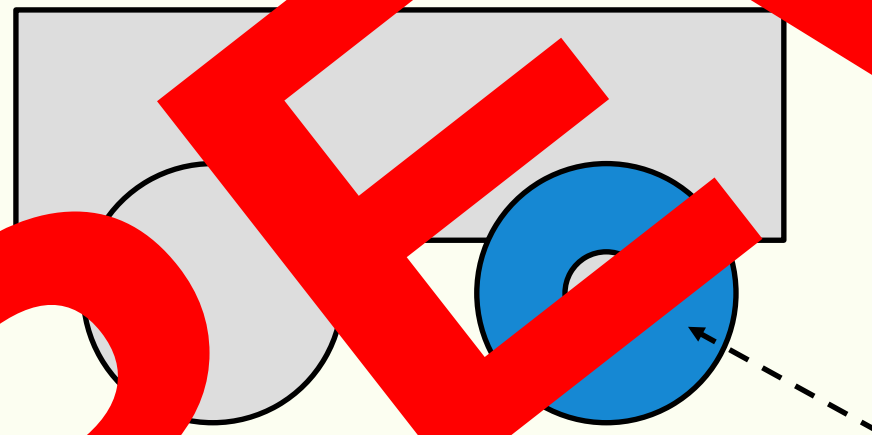
# Question 1

What shape is the wheel  
outside outline



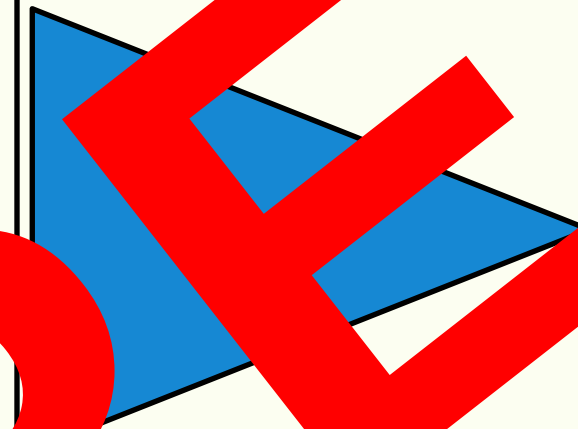
# Answer 1

Circle.  
Its outside boundary is curved.



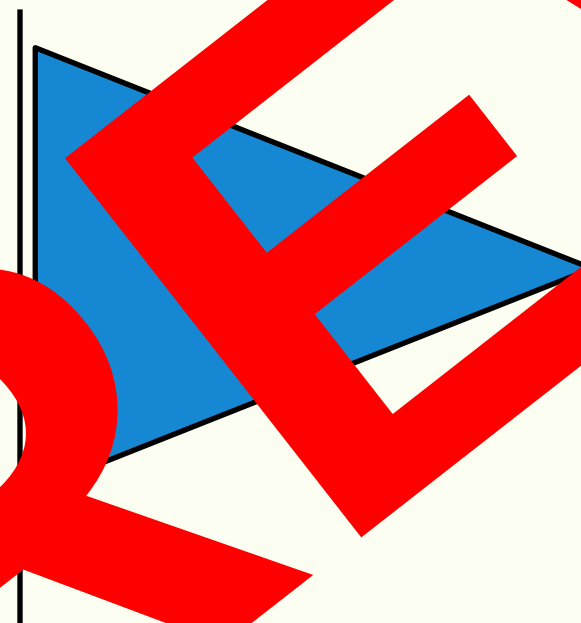
## Question 2

How many straight sides  
does this flag have?



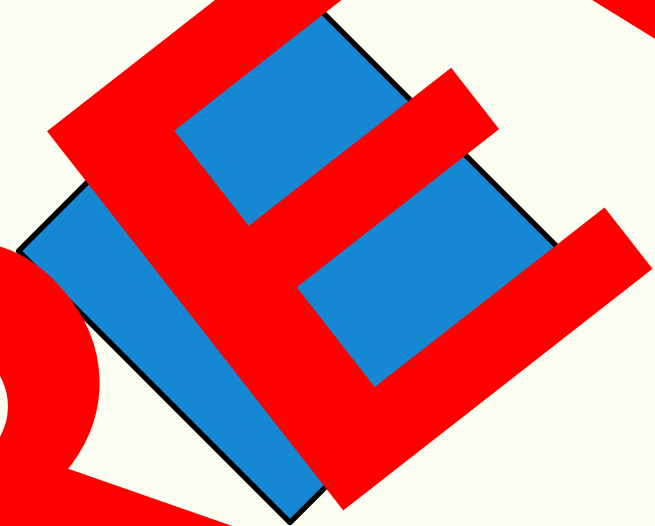
## Answer 2

3 straight sides  
The flag's boundary is a triangle.



## Question 3

What is the secret name  
for this four-equal-side shape?



tile front



# Answer 3

Square. Turning keeps square sides  
and 4 square corners.

tile front



## Question 4

Which clue fits the document?



- 3 corners
- 4 square corners



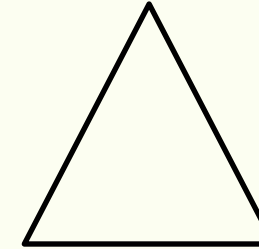
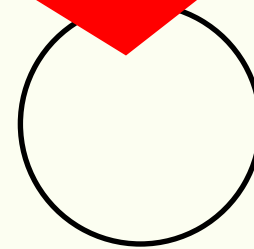
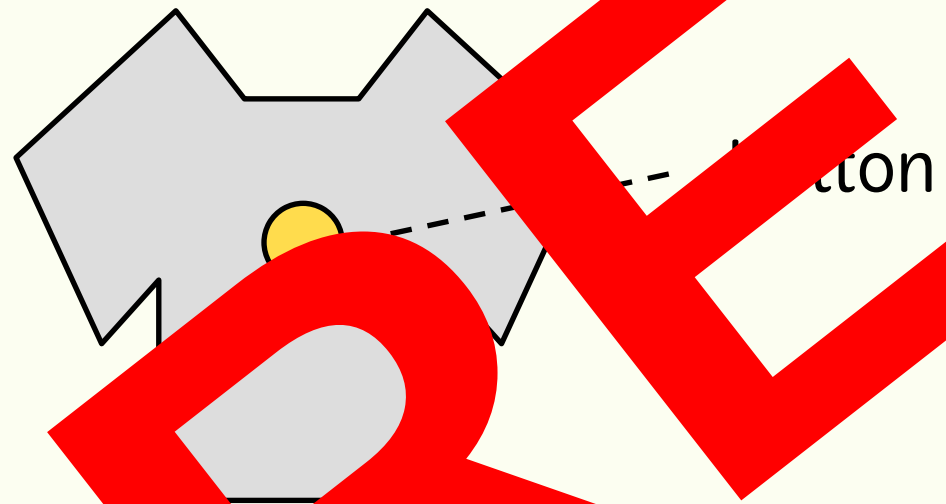
## Answer 4

4 square corners.  
It has 2 longer and 2 shorter sides.



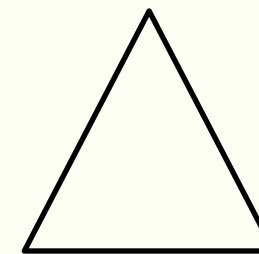
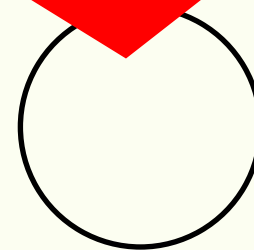
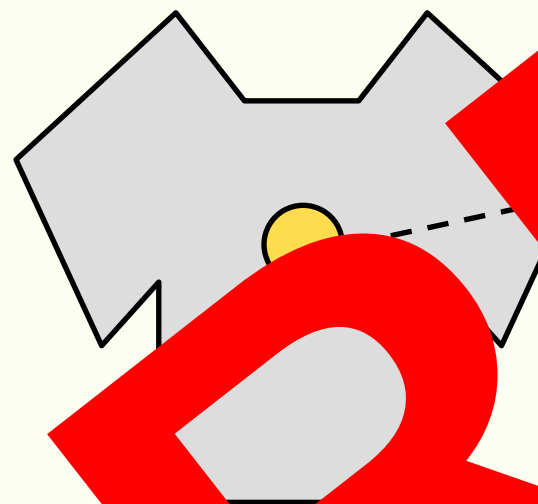
## Question 5

Which outline matches the button to  
a circle or a triangle?



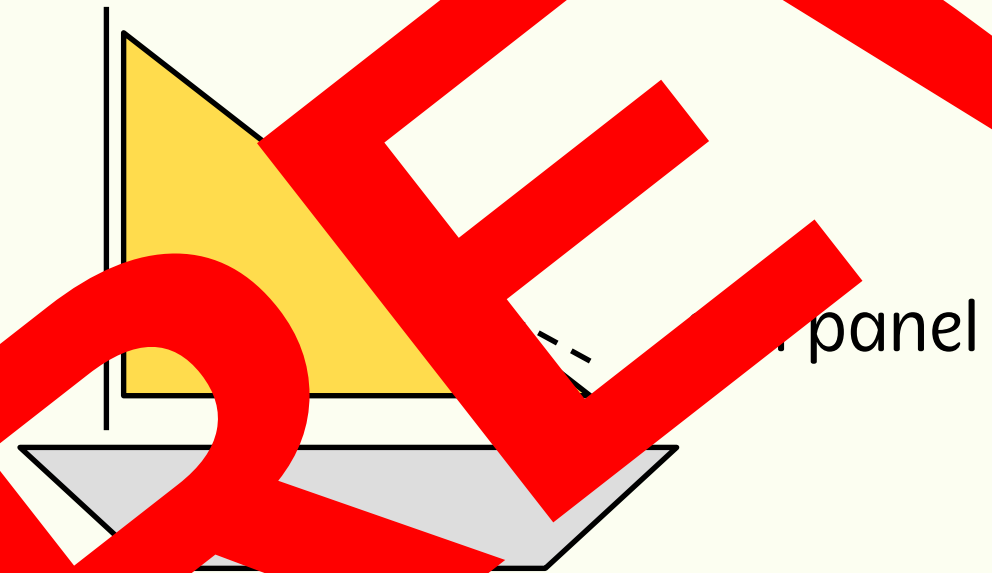
# Answer 5

Circle. The button's outside  
boundary is curved.



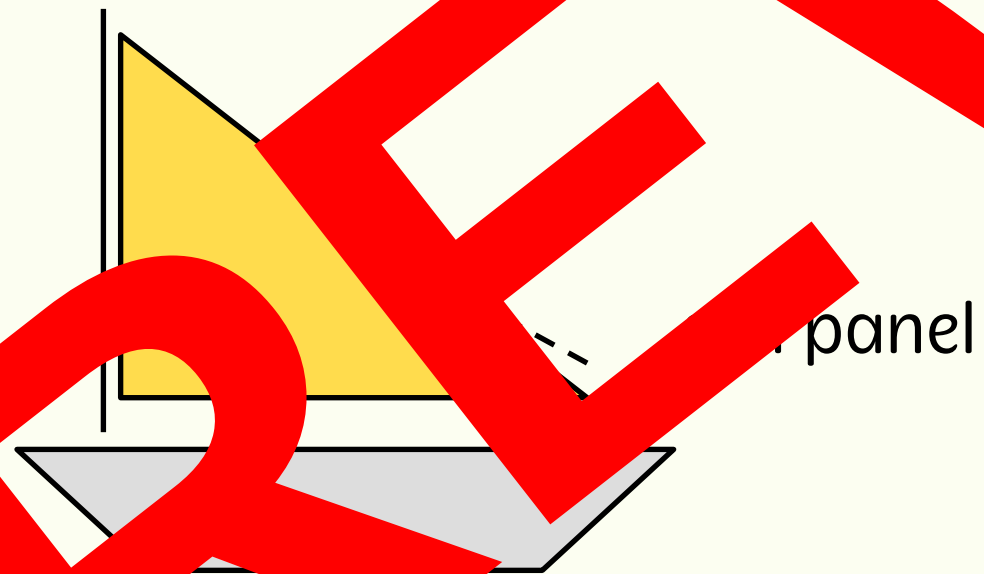
## Question 6

Sort by shape. Which family  
takes this shape panel?



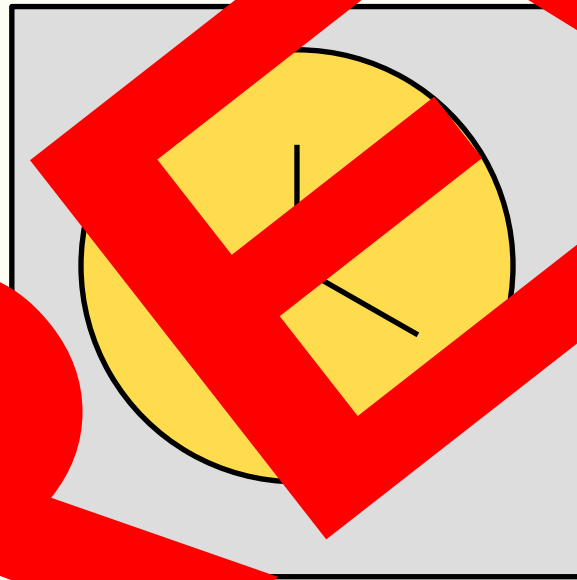
# Answer 6

Triangle.  
Its boundary has 3 straight sides.



## Question 7

Which clue explains  
the clock face's shape?

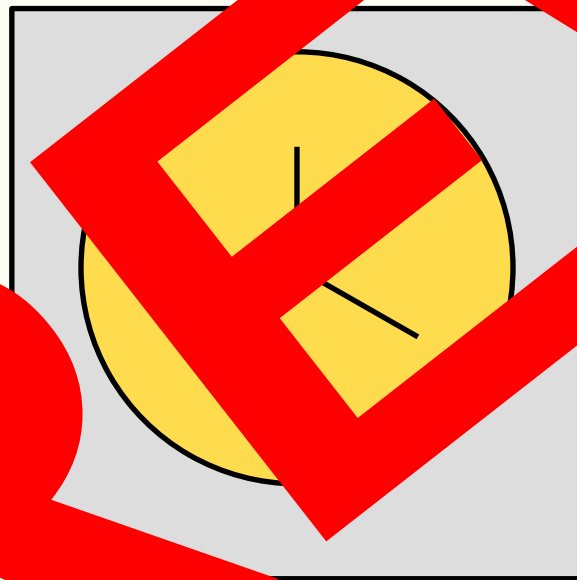


- curved boundary
- 4 straight sides



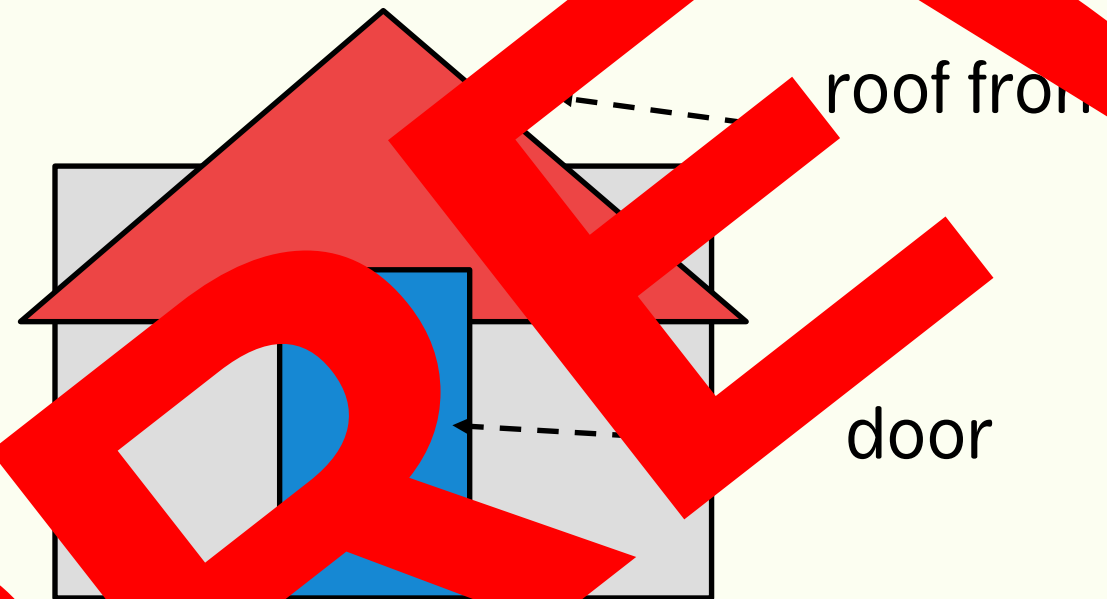
# Answer 7

Curved boundary.  
The face is a circle.



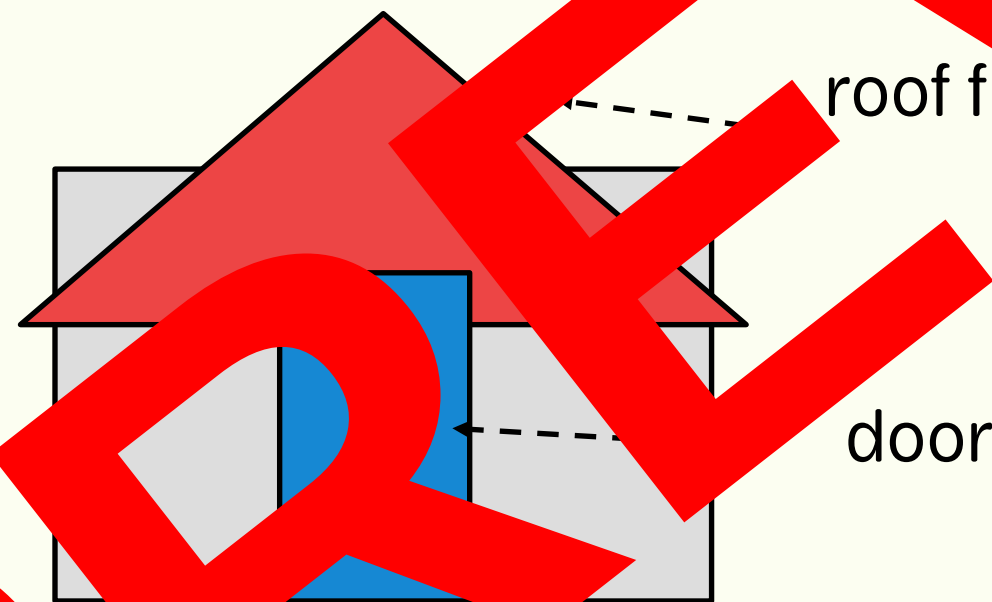
## Question 8

Which named part has corners?



# Answer 8

The roof front face.  
It is a triangle with 3 corners.



roof front

door

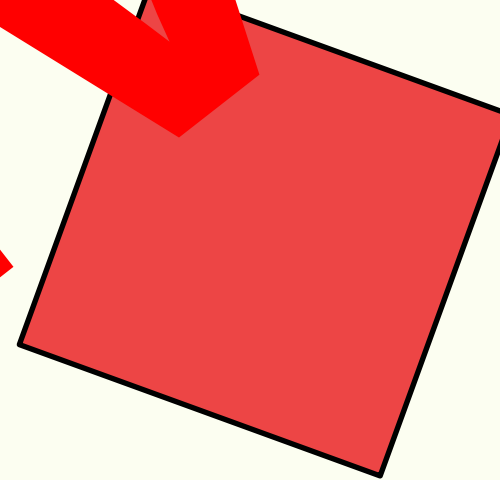


# Question a

Does turning this poster  
change its shape family?



Before



After a turn

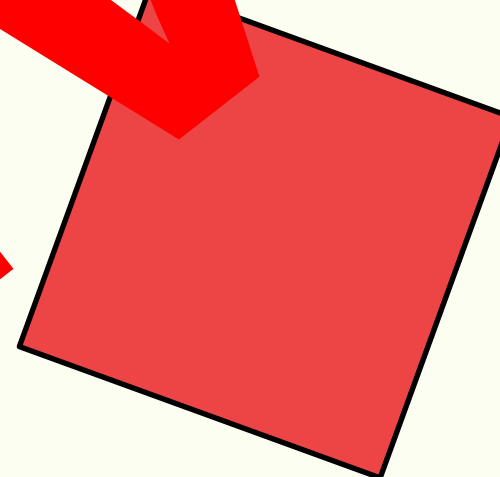


# Answer 9

No. It is still a square.  
Its equal sides and square corners stay.



Before

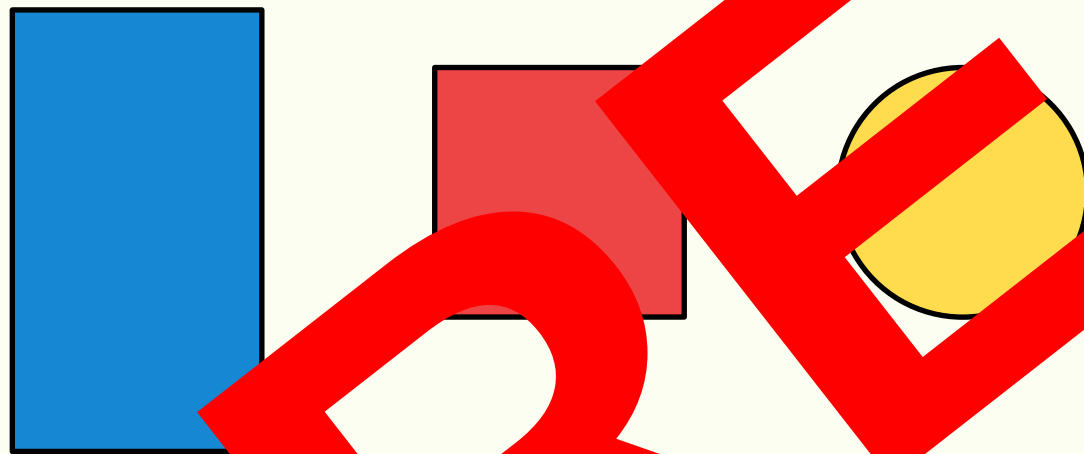


After a turn

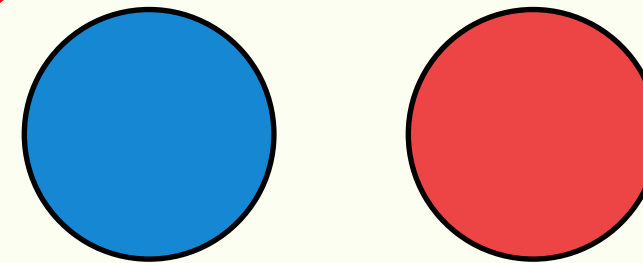


## Question 10

Which picture uses one or more shapes from 2 or more families?



Picture A

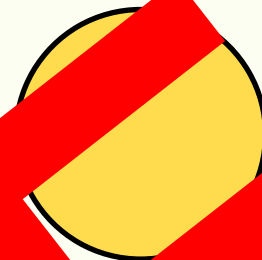
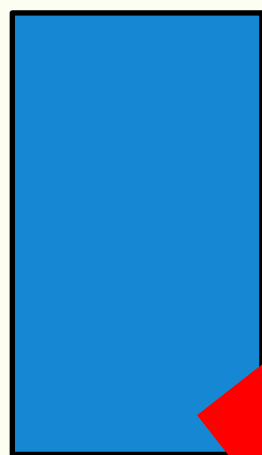


Picture B

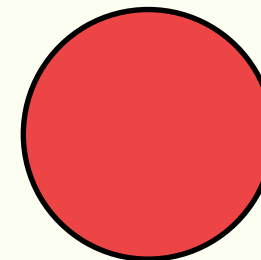
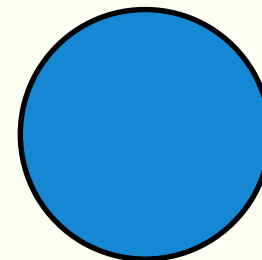


# Answer 10

Picture A: clock face (circle),  
poster (square) and door (rectangle).



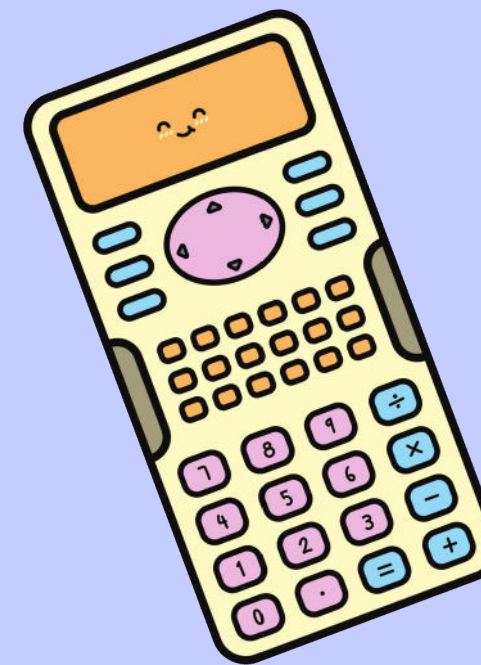
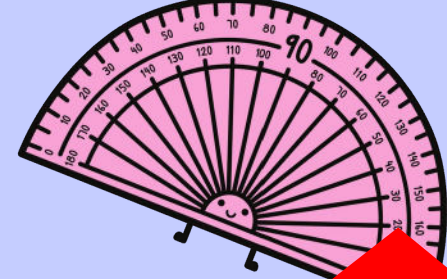
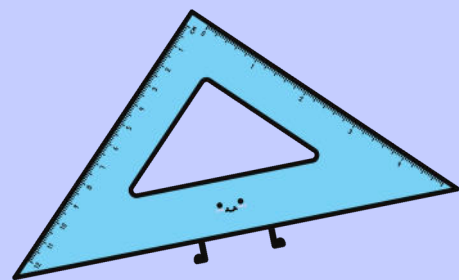
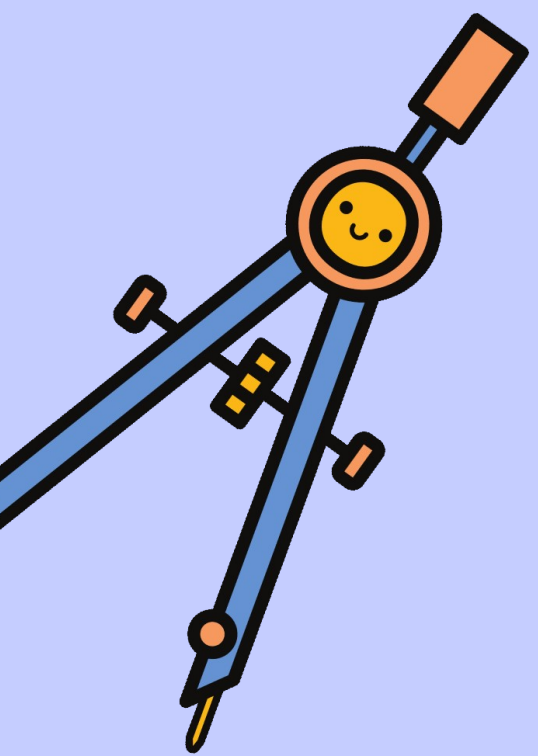
Picture A



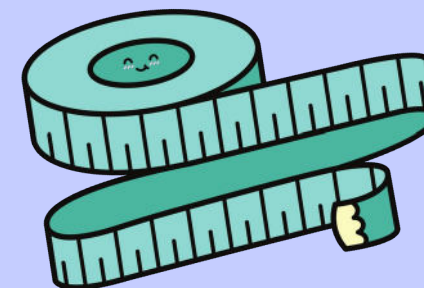
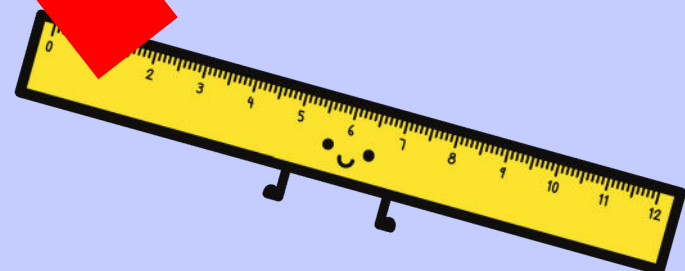
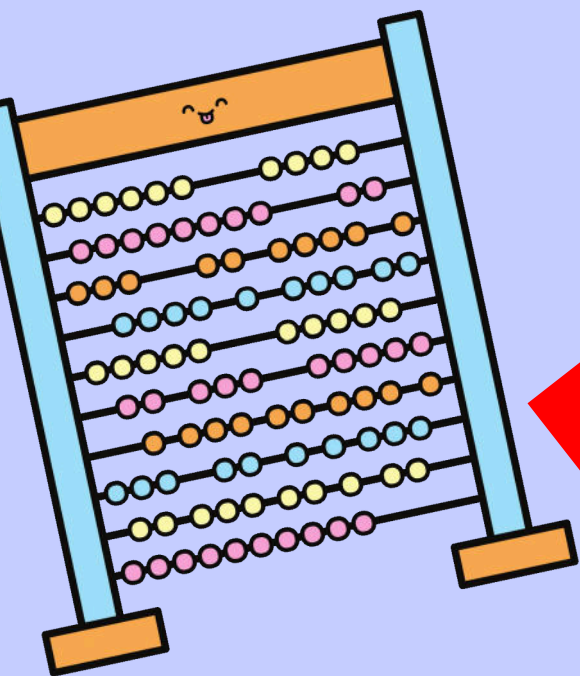
Picture B

Picture A has 3 shapes from 3 families.





Great work!



PREVIEW