



**University Learning in Schools**

# **Mathematics**

**3D Geometry in the Real World**

**Resources and Handouts**



## ULiS Maths resources

The following document contains all the handouts used in the ULiS Maths module “3D geometry in the real world”. A summary of all the resources is given below:

Page 2 contains the Vocabulary Knowledge Rating sheet. One copy of each sheet was given to each pupil in the class approximately two weeks before the teaching of the ULiS module. The pupils were told to fill these in and return them to the teacher before the first lesson, to inform the groupings of pupils used in the first few lessons.

For lesson 1, the pupils were given the net of a football. There were two versions of the net: “Football net [Version 1, one part only].pdf” was the standard net, whilst “Football net [Version 2, six parts].pdf” was a more complicated six-part net (where more gluing was required). For the version 2 net, after cutting each net out, the flap labelled  $k$  on page 1 should be glued to the side labelled 1 on page  $k$  (repeat for  $k = 2, 3, 4, 5, 6$ ). In other words, flap 2 on page 1 glues to side 1 on page 2, flap 3 on page 1 glues to side 1 on page 3, flap 4 on page 1 glues to side 1 on page 4, flap 5 on page 1 glues to flap 1 on page 5, and lastly flap 6 on page 1 glues to flap 1 on page 6.

Page 4 contains the concept map for Lesson 1.

Pages 7 and 8 contain the nets of the cube and cuboid respectively. These were used in lesson 2.

Pages 9 and 10 contain the nets of the square-based pyramid and octahedron respectively. These were used in lesson 3.

The remaining pages contain the nets of the tetrahedron, pentagonal pyramid, hexagonal prism, rhombic prism, dodecahedron and icosahedron. These were brought along for lesson 4, and were used in case some pupils did not bring in a 3D shape or a net of their own.

Voting forms used in lesson 6 can be found on pages 17 and 18.

## Vocabulary/Knowledge Rating

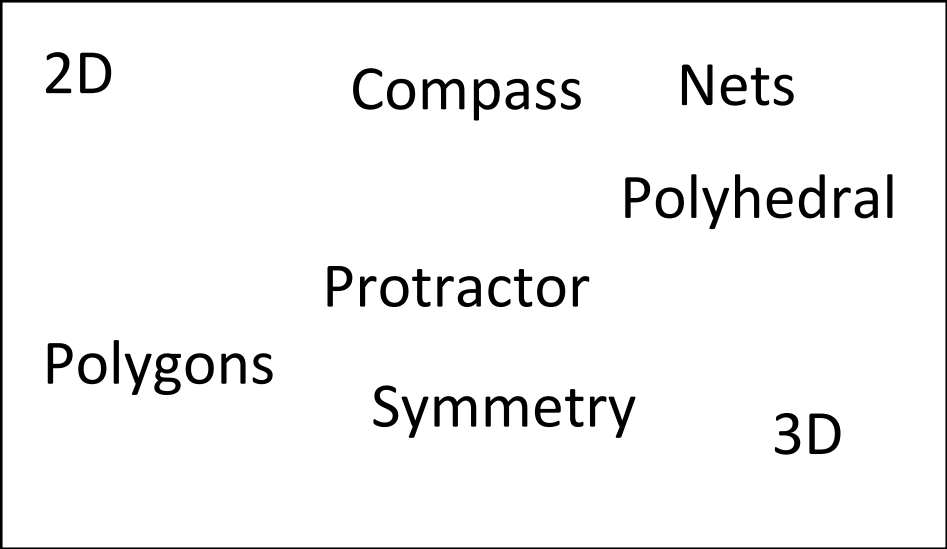
### Rate Your Knowledge

Directions:

1. Consider each of the words in the chart below.
2. In the first two columns place an **X** beside any word you have never heard of before or have heard of but don't know what it means.
3. In the 'Have some idea' column write down what you think you know about the word.
4. In the 'Know it Well' column write down your definition of the word.

Vocabulary	Never Heard of it	Heard of it	Have Some Idea	Know it Well
Symmetry				
Nets				
Faces				
Edges				
Vertices				

# Concept Map (Lesson 1)



# What Went Well / Even Better If forms (Lessons 1-6)

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

Date: \_\_\_\_\_

What went well:

Even better if:

I can achieve this by:

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

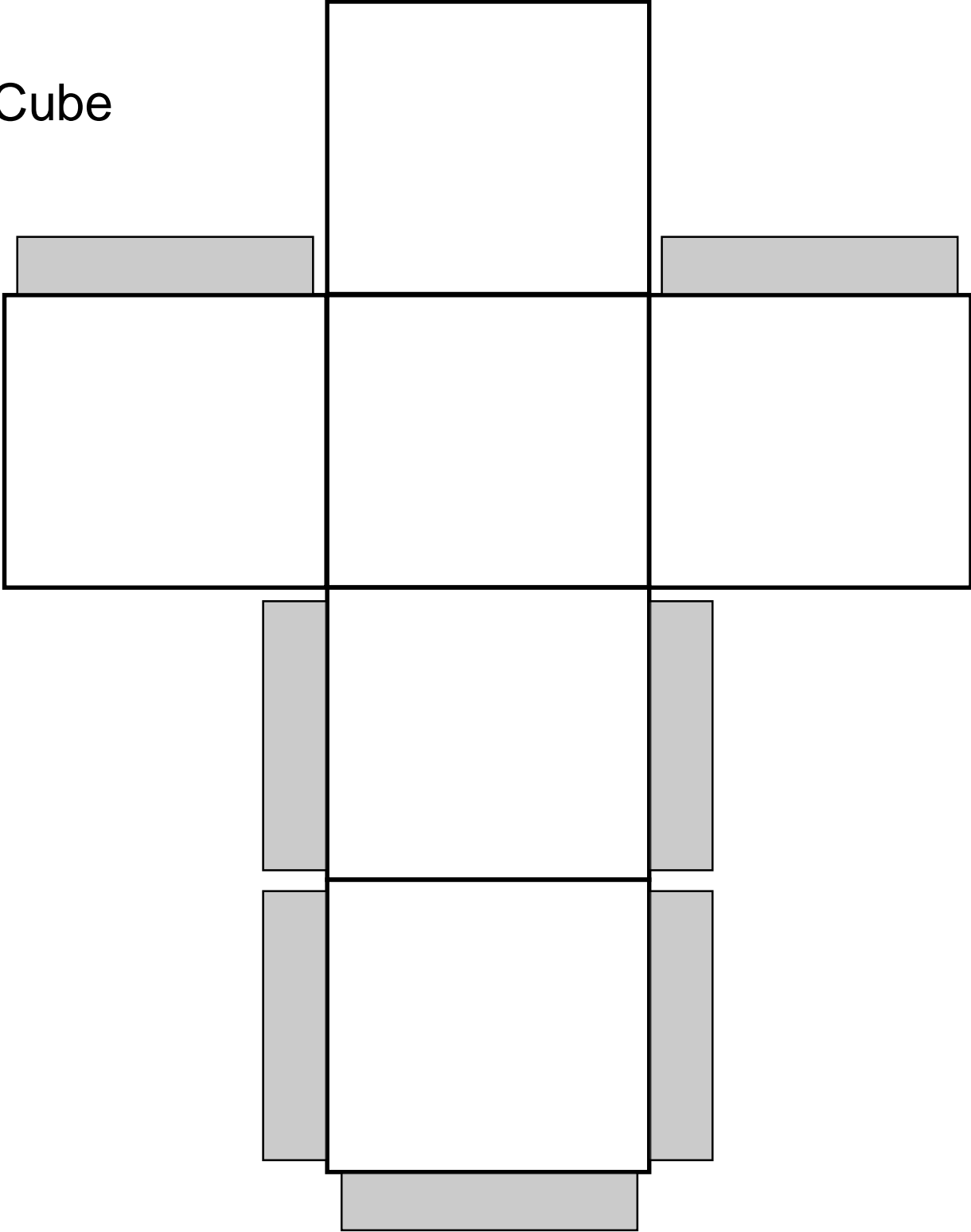
Date: \_\_\_\_\_

What went well:

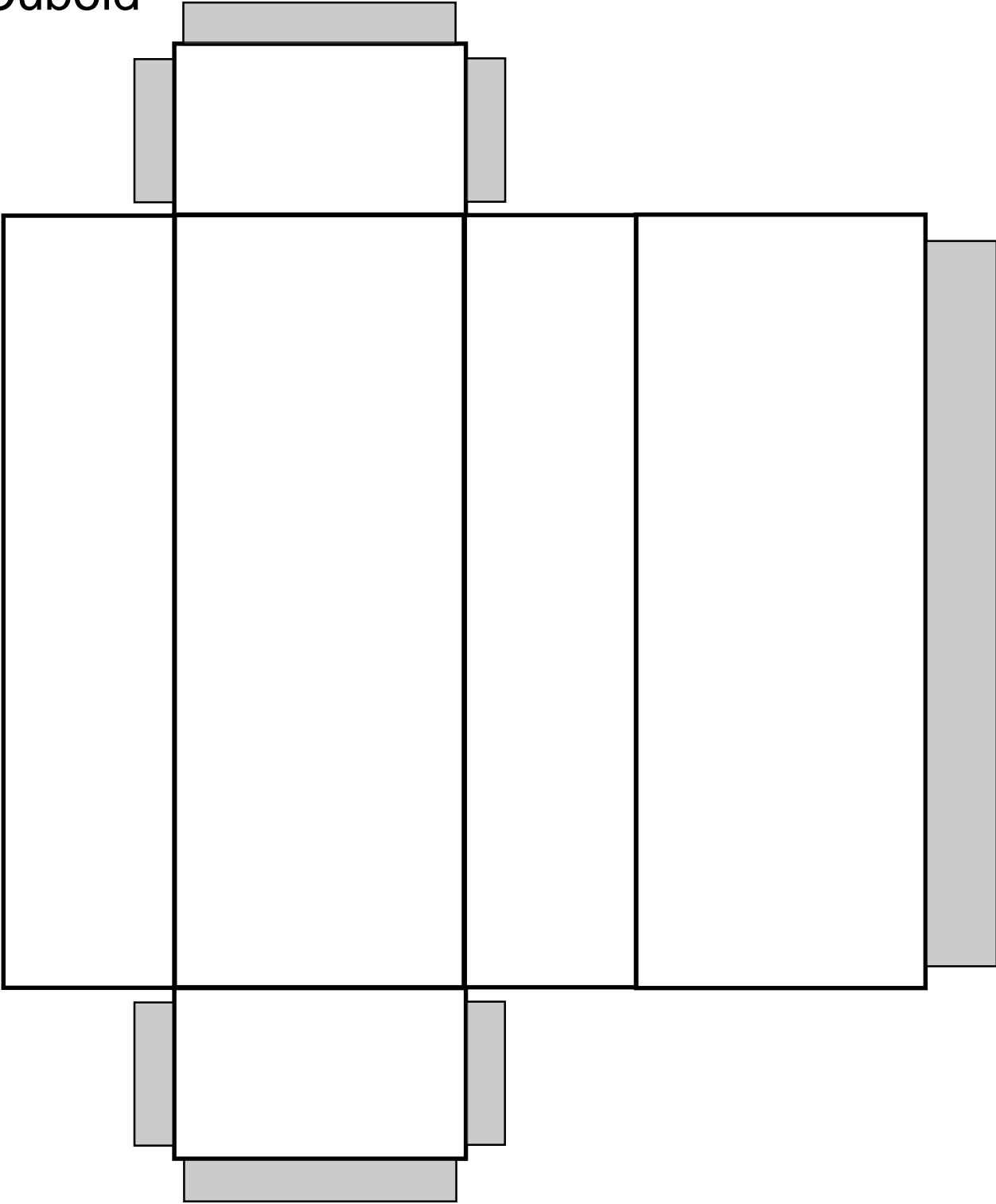
Even better if:

I can achieve this by:

# Cube

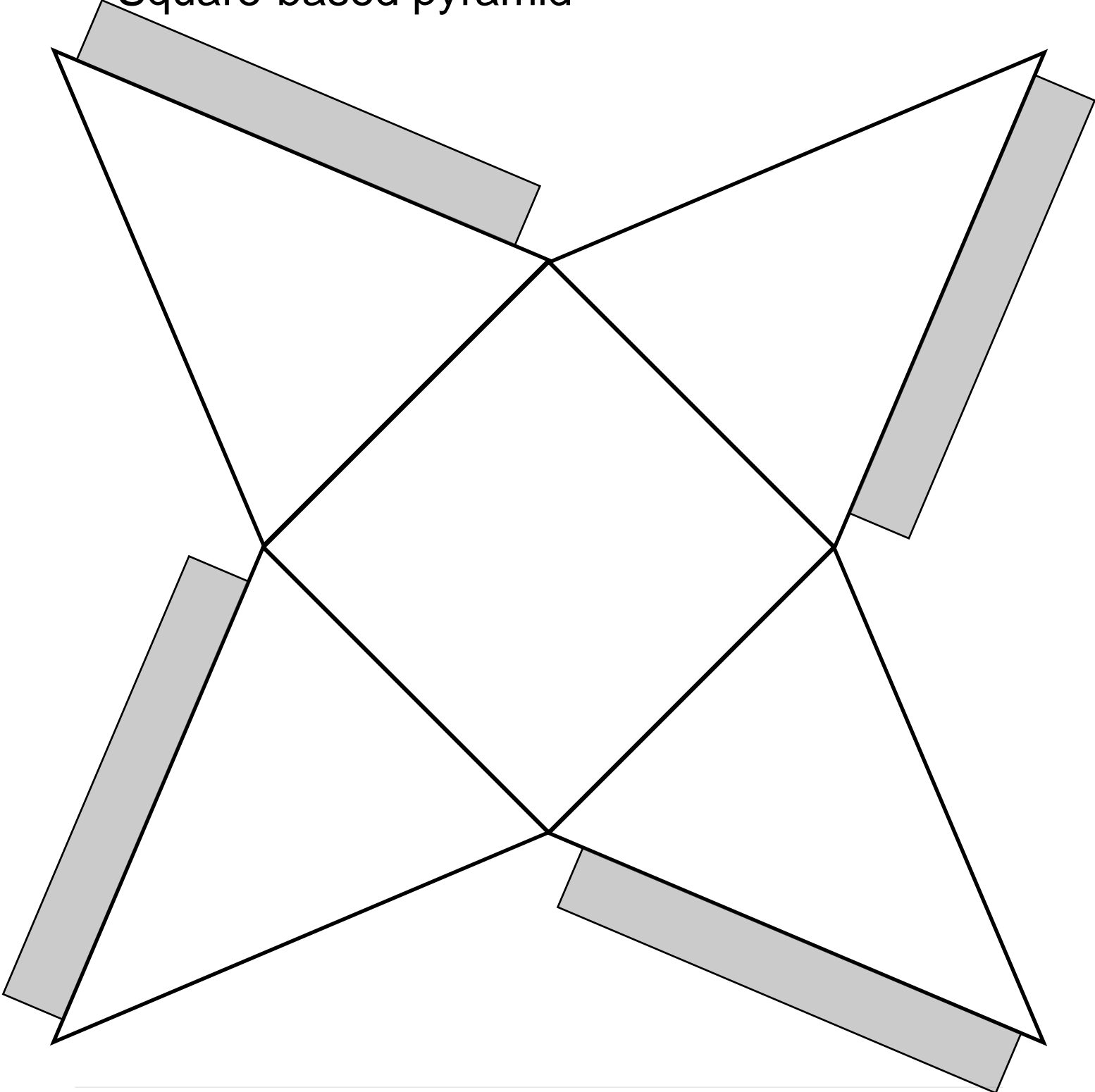


# Cuboid

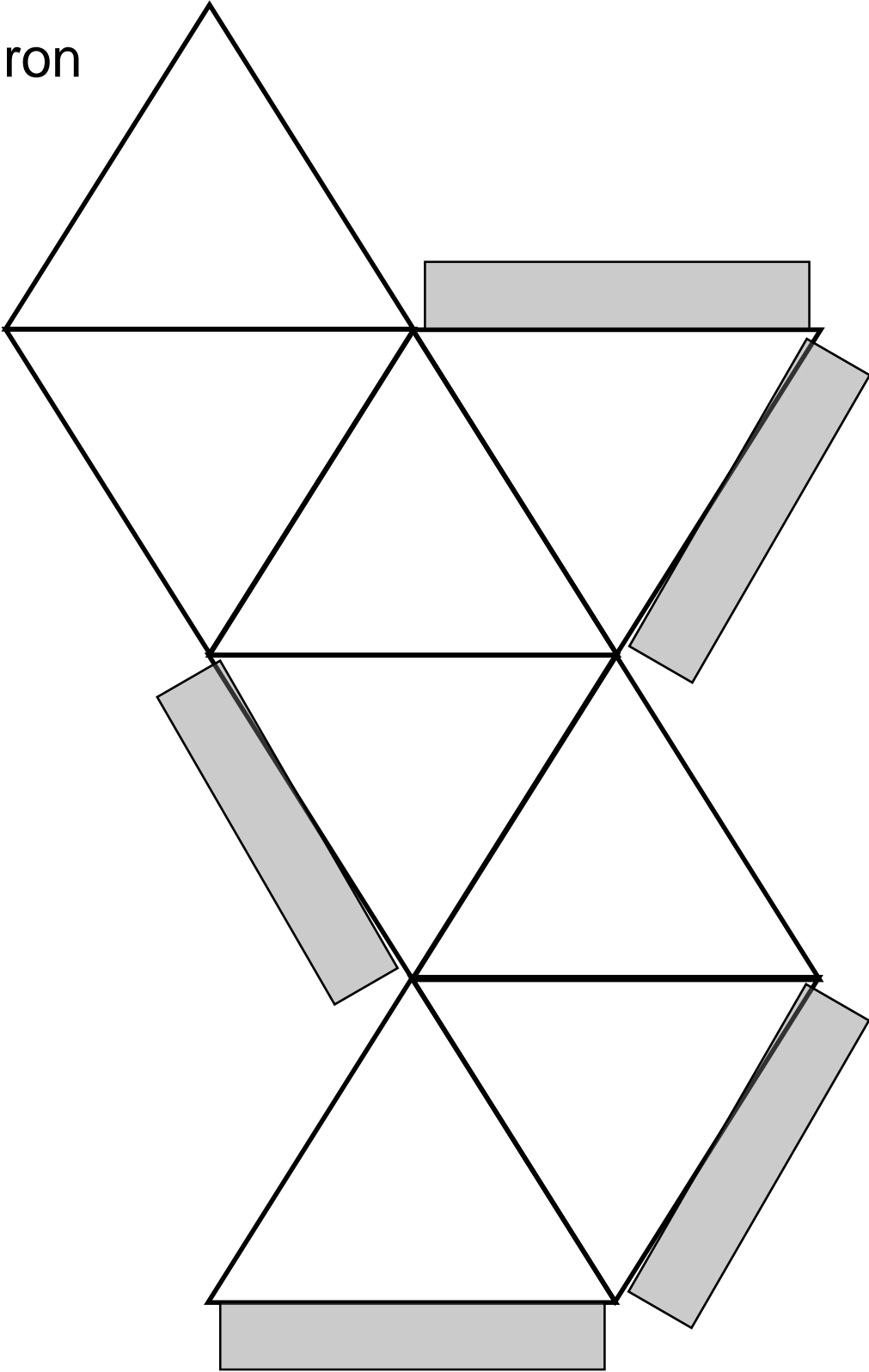




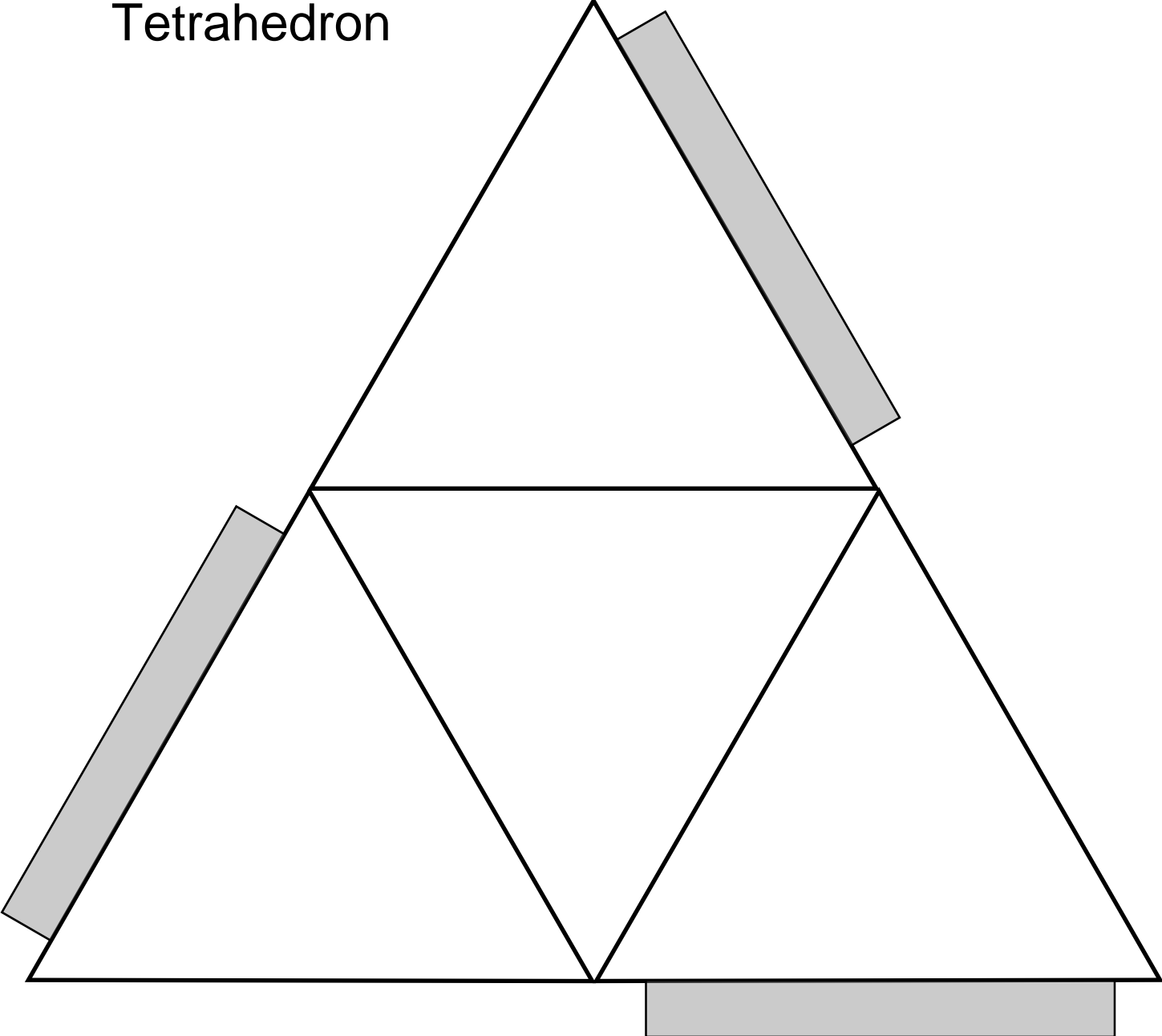
# Square-based pyramid



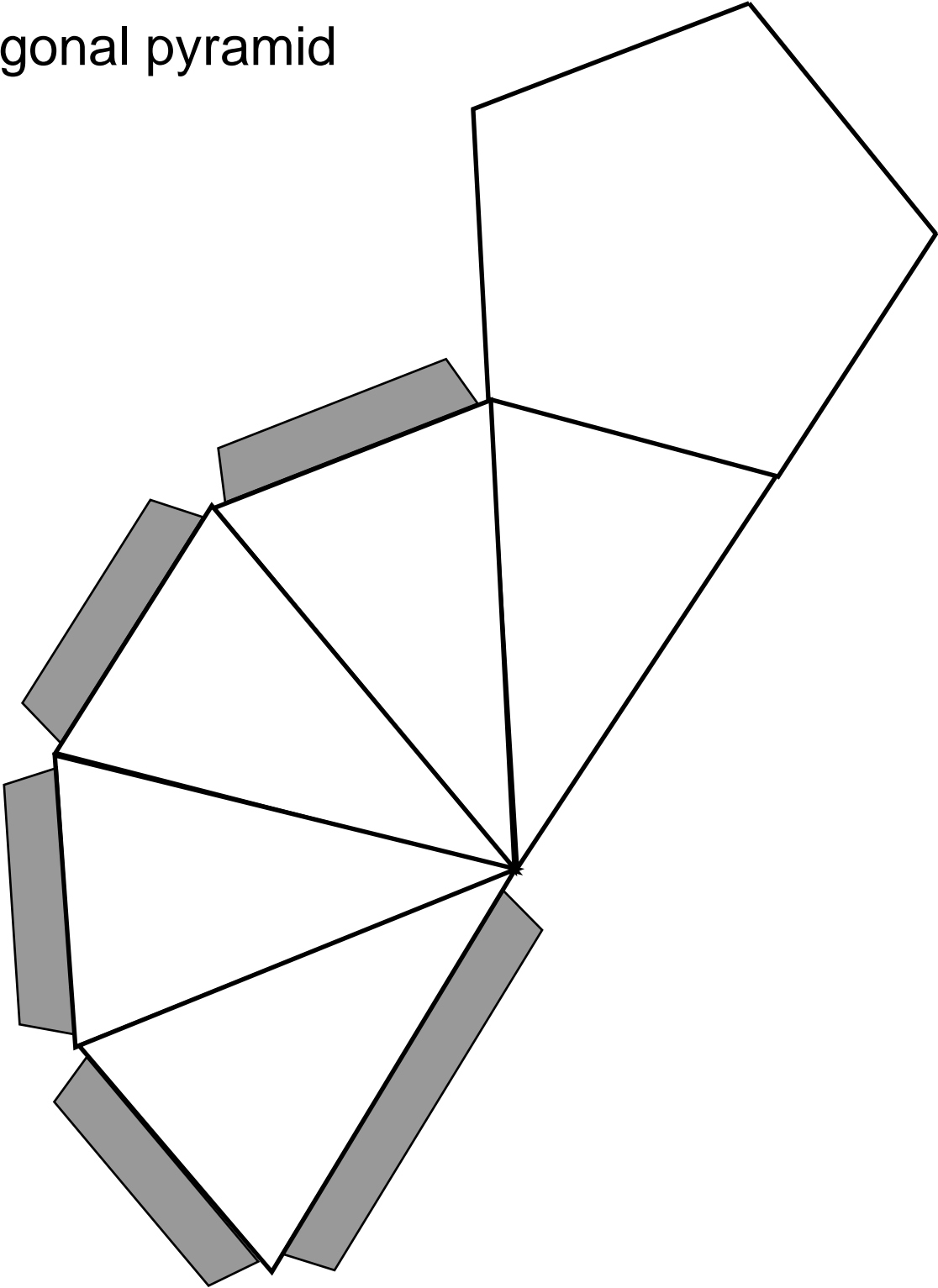
# Octahedron

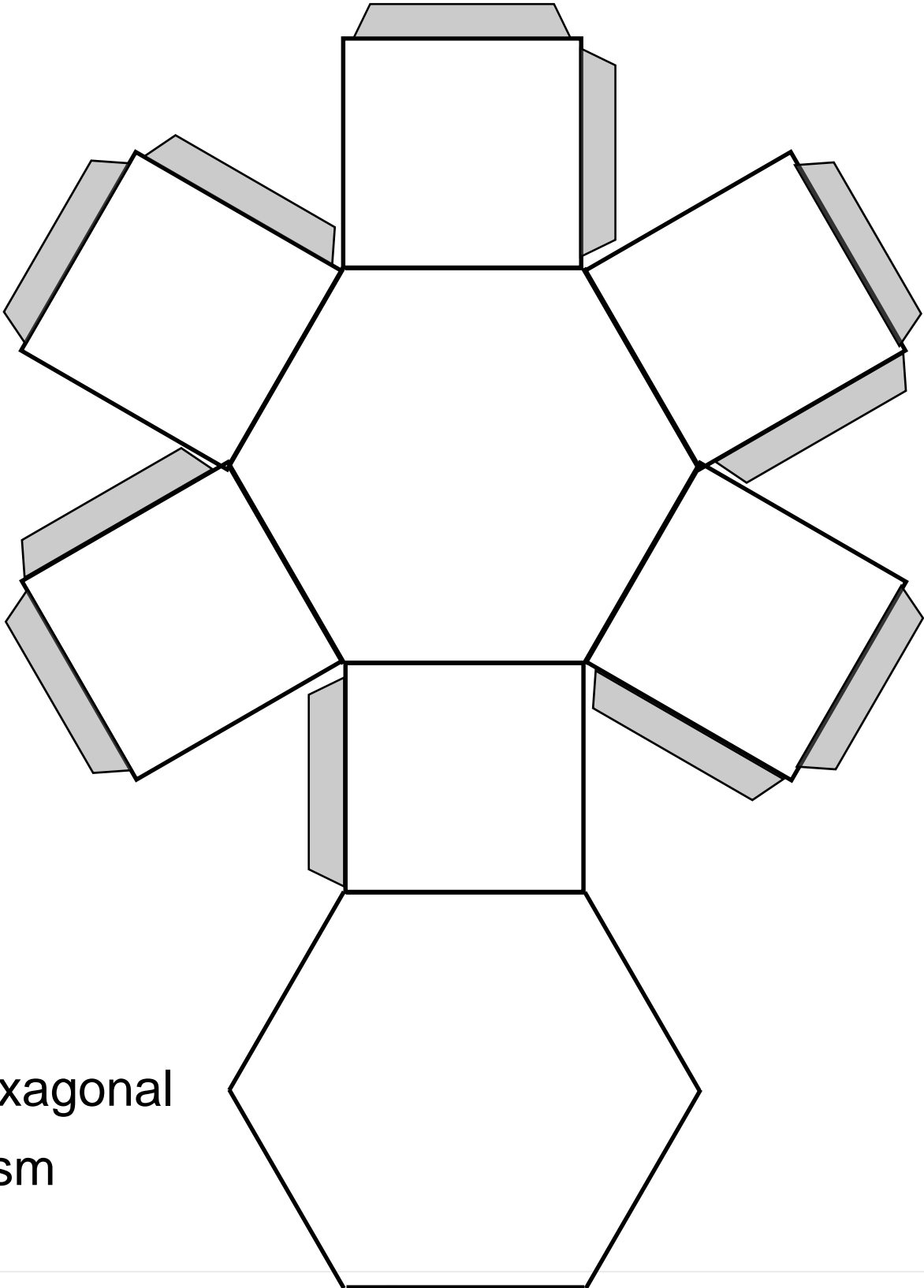


# Tetrahedron

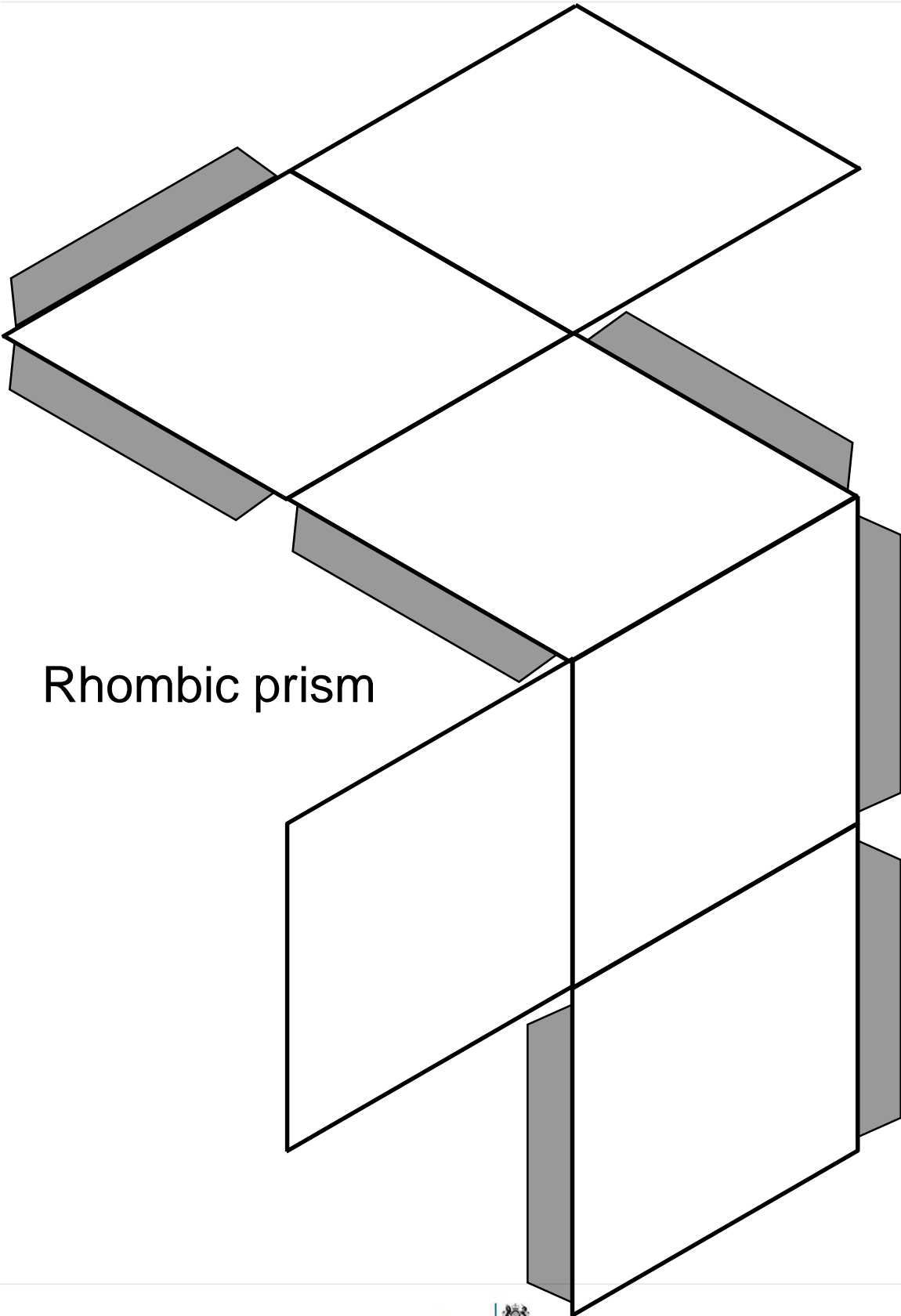


# Pentagonal pyramid

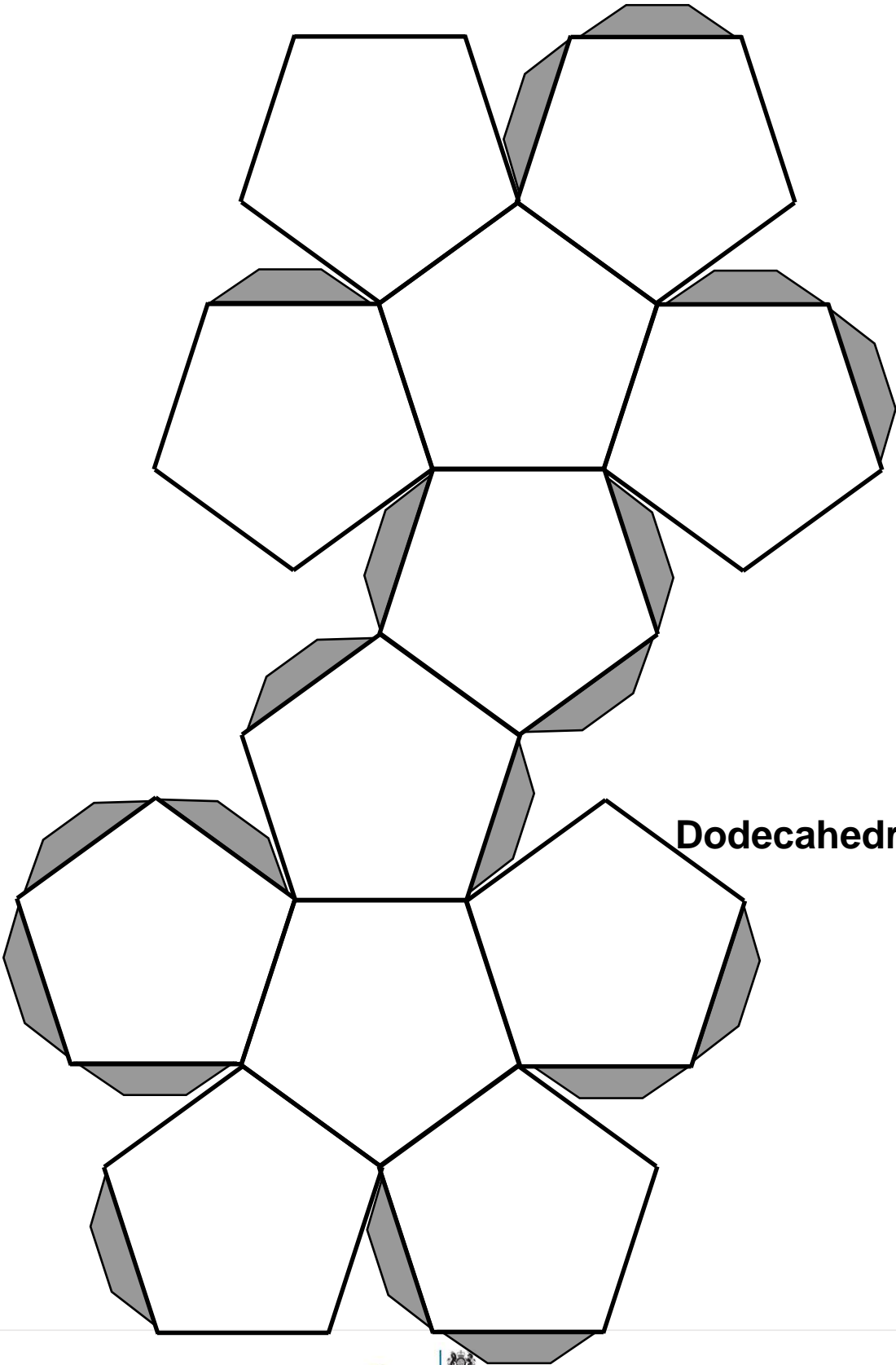




Hexagonal prism

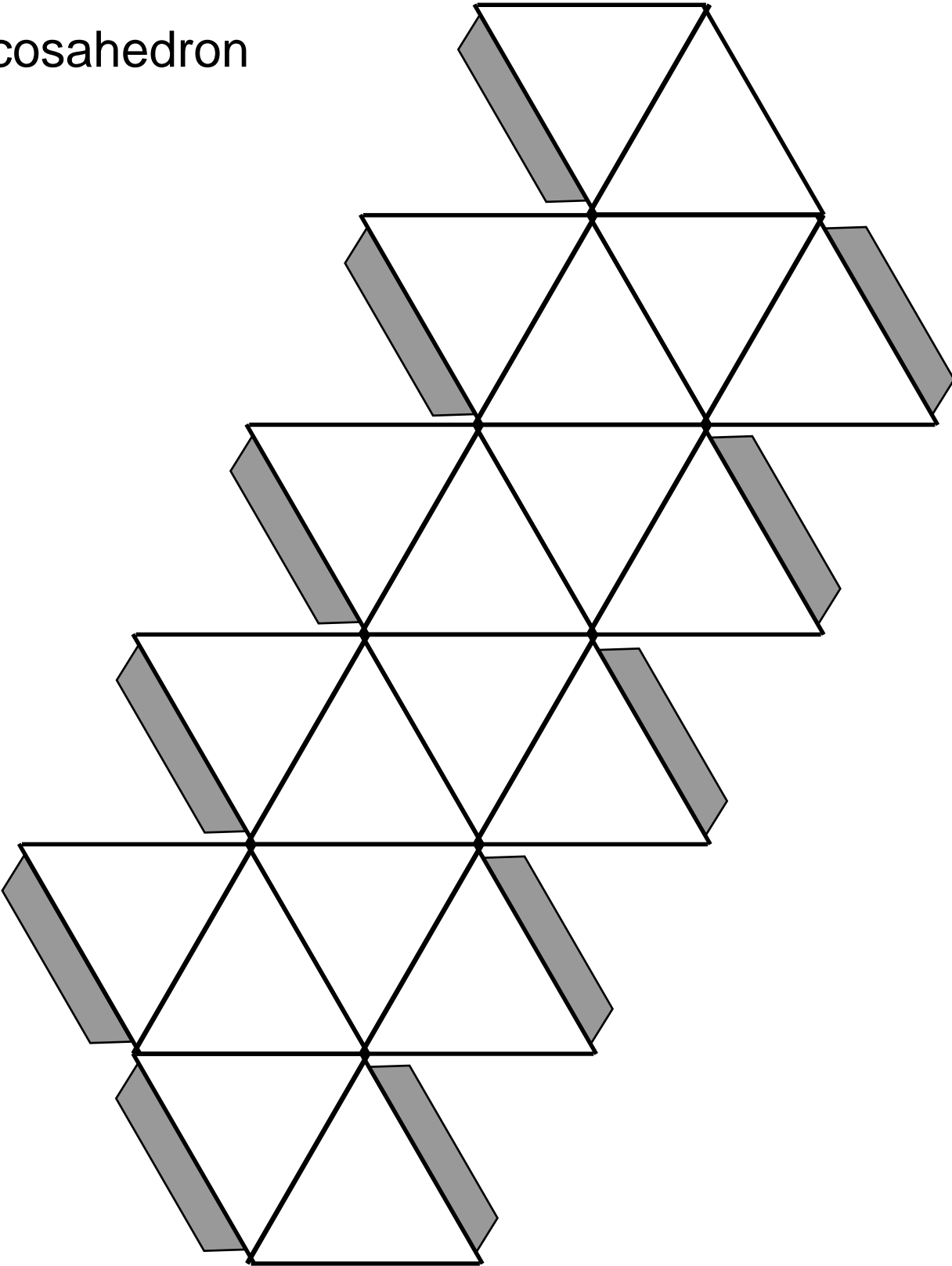


Rhombic prism



**Dodecahedron**

# Icosahedron





## Voting forms (Lesson 6)

Criteria	Score out of 10
Total out of 30	

Presentation group: \_\_\_\_\_  
\_\_\_\_\_

Presentation group: \_\_\_\_\_  
\_\_\_\_\_

Criteria	Score out of 10
Total out of 30	