



Description

- Construct different prisms and pyramids.

Materials:

- BLM18.1
- Platonic numeric solids

Assessment Opportunities

Minds On ...

Whole Class → Guided

Use large cut-outs of the 3 nets for a cube on BLM 18.1 to discuss the students' responses and to review vocabulary.

Curriculum Expectations/Question & Answer/Mental Note: Show a variety of familiar polyhedrons one at a time, and have students predict what the net of each figure would look like. Encourage students to use appropriate mathematical terminology. For example, ask, What would the net of this chocolate bar package look like? Open the chocolate bar package into its net to illustrate the 3 congruent rectangles and 2 congruent triangles.

Demonstrate the nets for a prism and a pyramid pair, e.g., a cube and a square-based pyramid. Ask, What are the similarities and differences between prisms and pyramids? Compare the number of congruent shapes on the net to the number of congruent faces on the 3-D figure.



Product packaging: A chocolate bar package having three congruent rectangles and two congruent triangles and an octagonal prism cleaning cloth box.

Some nets are in Impact Math: *Geometry & Spatial Sense* pages 15-20.

Action!

Pairs → Tactile Activity

Each pair constructs at least one of the 16 polyhedrons - triangular, square, rectangular, pentagonal, hexagonal, and octagonal prisms; triangular, square, rectangular, pentagonal, hexagonal and octagonal pyramids; tetrahedron; octahedron; icosahedron; and dodecahedron, from nets using polyhedrons, paper/cardboard, TABS+ software.

Ask:

- How could you use ratios (or similar triangles) to make the net of a polyhedron larger or smaller?
- How many faces of a polyhedron share the same edge?
- Is it possible to create a polyhedron with two different sets of congruent faces?

Circulate among the groups, discussing the process and, listening for proper terminology and evidence of understanding. Assist students who have difficulty manipulating and gluing the nets.

TABS+ software [TABS+ is a Ministry licensed program for designing nets. It is user-friendly and allows students to experiment with simple and complex 3-D figures in a short period of time. Instructions for using the software are included in this resource, in the section containing manuals.]

Consolidate Debrief

Whole Class → Student Presentation

Select students to present their polyhedrons based on variety and quality of figures.

Curriculum Expectations/Quiz/Marking Scheme: Students demonstrate appropriate use of language and identification of correspondence between nets and 3-D figures.



Note: A complete class set of these 16 polyhedrons is needed for the summative assessment task.

Select a student to add vocabulary to the Word Wall.

Home Activity or Further Classroom Consolidation

Conduct a 3-D figure scavenger hunt searching for figures to add to the classroom collection. (You may find regular or irregular figures, but they should have flat, not curved, faces.)

Application