

PRISMS AND PYRAMIDS - PROPERTIES, CROSS-SECTIONS.

INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

- In pairs, children each construct the same prism from modelling clay, for example, a square prism. They identify and describe the properties of the square prism, for example, 6 faces including 2 bases, faces that aren't bases are quadrilaterals, bases are squares. *Reflection: How can we describe the properties of prisms and pyramids?*
- In pairs, children each construct the same pyramid from modelling clay, for example, a square pyramid. They identify and describe the properties of the square pyramid, for example, 5 faces including 1 base, faces that aren't bases are triangles, base is square. *Reflection: How can we describe the properties of prisms and pyramids?*
- In pairs, children each construct the same prism from modelling clay, for example, a square prism. One child cuts sections from their square prism. The other child cuts cross-sections from their square prism. They each describe the sections and the cross-sections, identifying that cross-sections are cut parallel to the bases, and therefore are the same shape and size as the bases. They identify the cross-sections of the prism are uniform because they are the same shape and size as the bases. *Reflection: How can we describe sections and cross-sections on prisms?*
- In pairs, children each construct the same pyramid from modelling clay, for example, a square pyramid. One child uses a plastic knife or fishing line to cut sections from their square pyramid. The other child uses a plastic knife or fishing line to cut cross-sections from their square pyramid. They each describe the sections and the cross-sections, identifying that cross-sections are cut parallel to the bases, and therefore are the same shape. They identify the cross-sections of the pyramid are non-uniform because they are the same shape but different sizes to the base. *Reflection: How can we describe sections and cross-sections on prisms?*
- In pairs, children have transparent fill-able containers in the shape of prisms and pyramids and coloured water. They pour in a small quantity of the coloured water and tilt the container to make a section or cross-section. They record the section or cross-section, identifying that the cross-section is parallel to the base. *Reflection: How can we describe sections and cross-sections on prisms and pyramids?*
- In pairs or small groups, children have a prism or pyramid and a bag. One child places a prism or pyramid in a bag. Another child places their hand into the bag and describes the faces and bases. The other child / children suggest what object it could be. *Reflection: How can we describe the properties of prisms and pyramids?*
- In pairs, children sit opposite each other with a barrier between them. One child selects a prism or pyramid and describes the faces and bases. The other child identifies the prism or pyramid. *Reflection: How can we describe the properties of prisms and pyramids?*

Prisms and Pyramids - Properties, Cross-sections.

Sit with a friend.

Each of you construct the same prism from modelling clay, for example, a square prism.

Each of you identify and describe the properties of the square prism, for example, 6 faces including 2 bases, faces that aren't bases are quadrilaterals, bases are squares.

Each of you construct the same pyramid from modelling clay, for example, a square pyramid.

Each of you identify and describe the properties of the square pyramid, for example, 5 faces including 1 base, faces that aren't bases are triangles, base is square.

Reflection: How can we describe the properties of prisms and pyramids.

Prisms and Pyramids - Properties, Cross-sections.

Sit with a friend.

Each of you construct the same prism from modelling clay, for example, a square prism.

One child uses a plastic knife or fishing line to cut sections from their square prism.

The other child uses a plastic knife or fishing line to cut cross-sections from their square prism.

Each of you describe the sections and the cross-sections, identifying that

- cross-sections are cut parallel to the bases, and therefore are the same shape and size as the bases.
- cross-sections of the prism are uniform because they are the same shape and size as the bases.

Each of you construct the same pyramid from modelling clay, for example, a square pyramid.

One child uses a plastic knife or fishing line to cut sections from their square pyramid.

The other child uses a plastic knife or fishing line to cut cross-sections from their square pyramid.

Each of you describe the sections and the cross-sections, identifying that

- cross-sections are cut parallel to the bases, and therefore are the same shape.
- cross-sections of the pyramid are non-uniform because they are the same shape but different sizes to the base.

Reflection: How can we describe sections and cross-sections on prisms and pyramids.

Prisms and Pyramids - Properties, Cross-sections.

Sit in pairs or small groups.

Have transparent fill-able containers in the shape of prisms and pyramids.

Have some coloured water.

Pour in a small quantity of the coloured water and tilt the container to make a section or cross-section.

Record the section or cross-section, identifying that the cross-section is parallel to the base.

Identify whether the cross-section is uniform or non-uniform.

Reflection: How can we describe sections and cross-sections on prisms and pyramids.

Prisms and Pyramids - Properties, Cross-sections.

Sit in pairs or small groups.

Have a prism or pyramid and a bag.

One child places a prism or pyramid in a bag.

Another child places their hand into the bag and describes the faces and bases.

The other child / children suggest what object it could be.

Reflection: How can we describe the properties of prisms and pyramids?

Prisms and Pyramids - Properties, Cross-sections.

Sit in pairs, opposite each other with a barrier between you.

One child selects a prism or pyramid and describes the faces and bases.

The other child identifies the prism or pyramid.

Reflection: How can we describe the properties of prisms and pyramids?