GRADE 2

Space Plough II

Artist: Sorel Etrog

Curriculum Links

Science

Social Studies

Visual Art

Math

Before You Visit:

Introduce students to the concept of **simple machines**, including *a wedge*. A Wedge being something that starts out thick at one edge and gets thin at the other, and is used to split or separate things. Using a pie cutter as an example, point out that the surface is very thin, but the backend is thicker, and this is how it slices. Brainstorm other objects that have similar attributes and can be used in this way (an axe, a nail, and a plough).

Materials:

- Pie cutter or similar
- Wooden Blocks/Wedges
- Hammer
- Nails
- Bolts
- Camera

Development in the Classroom:

Step 1: Making an Object Move
Hand each student a wooden block and ask them to discover different ways they can make the block move (push, pull, drop, lift, etc.)

Step 2: Review *"What Does a Wedge Do?"*
Its main function is to split things. Students could also identify an axe, scissors, a knife, and a plough as examples of a wedge.

Step 3: *"Can a Wedge have another function?"*
Give students a block of wood and a wooden wedge. First, place the block against an open door. Then close the door. Next, place the wedge under the open door. This time when they try to close the door, they are unsuccessful. The wedge stops things from moving, as well as, splits things.

Step 4: A nail and a bolt with a block of wood and a hammer can also be used to demonstrate that a Wedge is a simple Machine that splits thick or separates things. The nail goes into the block of the wood much easier than the bolt.

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Development in the Sculpture Park:

Social Studies:

Sculptor Sorel Ertog (August 29, 1933- February 2014) was born in Romania, a country whose climate is similar to Canada's with cold winters and warm summers. Both Countries have variations in topography, which makes the ranges of temperatures varied. In Canada, as well as Romania, we wear warm clothes in the winters and have heavy machinery such as Ploughs to move snow when there are large winter storms.

"Space Plough II" is an example of his interest in Machinery, and how it affects our everyday lives.

- Ask students what they think the meaning of the title "Space Plough II" refers to? Is it an object from Outer Space? Is Ertog making a statement about how much snow we get? Is he interested in how we adapt to our climate and the ways we use Simple Machines, like the Wedge, to help us cope with our everyday lives? *Yes!* Make estimates at how tall a snow bank would have to be for this Plough Blade to push through it. Use the height of the students, would it take three students stacked on top of each other to be as tall as the Space Plough II?
- Have students join hands and make a human wedge the length of one side of the sculpture creating a point and a thick edge by making rows of two or three towards the back, take a photo for the class blog!

Closure:

Visual Arts: From two-dimension to three-dimension, form meets function:

Step 1: Using a small cardboard triangle shaped Template and tape, have students trace two of the triangles onto white cardstock.

Step 2: Using tape hinge the large sides of the triangle together at the back to form a plough. Decorate the front on a pattern that repeats with markers.

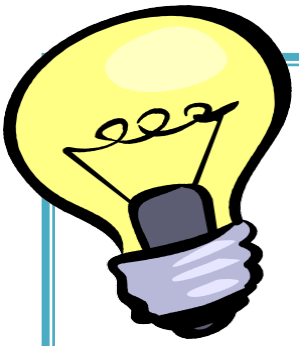
Step 3: Use these to demonstrate how a Plough would push through something like snow using rice or shredded paper on a desk. Create wavy patterns in the trail that it leaves behind as well by moving or wiggling the Plough back and forth.

Materials:

- Small cardboard triangle template
- Tape
- Pencils
- White Cardstock
- Markers
- Rice or shredded white paper
- Power Polygons
- Different coloured construction paper

More about the Artist:

Sorel Etrog's work has been displayed at major international galleries around the world from Israel to Singapore, from India to Switzerland. Etrog designed Canada's top film award the *Canadian Screen Award*, in 1968 (known as the *Etrog* until 1980). *Space Plough I* is currently on display at Toronto's Sculpture Garden.



Extensions: In the Classroom

Math: Geometric Relationships

- Compose and describe pictures, designs, and patterns by combining two-dimensional shapes. e.g., *"I made a picture of a flower from one hexagon and six equilateral triangles."*
- Compose and decompose two-dimensional shapes. ***Sample problem:*** Use Power Polygons to show if you can compose a rectangle from two triangles of different sizes.
- Cover an outline puzzle with two dimensional shapes in more than one way - build a structure using three-dimensional figures, and describe two-dimensional shapes and three-dimensional figures in the structure (***e.g.,*** *"I used a box that looks like a triangular prism to build the roof of my house."*)
- Using construction paper of different colours cut triangles of the same size, arrange triangles in different patterns; long sides together to imitate the Plough shape arrange them in abstract ways, for example:

Teacher Prompts:

- *If you could make a piece of Sculpture that was like a Machine what would you make?*
- *Where could you display it? E.g. a wheel that could be placed in front of a factory, an incline at a landfill?*
- *What other shapes can you find in Machines that can be used in Art making?*