Title: Tour of the Town!

Specific Expectations: (*Tip:* List by subject area; Copy directly from the Ontario Curriculum)

Math - Geometry and Spatial Sense

- Distinguish between the attributes of an object that are geometric properties and the attributes that are not geometric properties, using a variety of tools
- 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
- Build a structure using three-dimensional figures,and describe the 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.").

Arts - Visual Arts

D1.1 create two- and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature

D1.4 use a variety of materials, tools, and techniques to respond to design challenges

Lesson Description:

Students will use their 3D shapes and label faces, edges and vertices with different coloured markers. In groups of 3-4, students will create a tower using all their three-dimensional shapes. Students will discuss the shapes, label and explain its attributes using proper mathematical terminology (shapes, faces, vertices and edges). As a primer for the culminating task a three-dimensional anchor chart will be present during this activity to provide a reference base for the shapes.

Guiding Question(s)

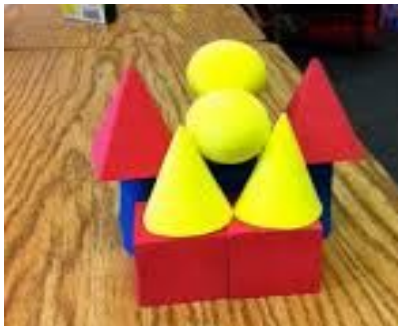
How are geometric shapes and their attributes represented in man-made objects?

Key Concepts/Big Ideas:

By the end of this lesson, students will be able to identify the three dimensional shapes and be able to list the attributes of these shapes. This includes edges, faces and vertices. The goal is to have students communicating their understanding of the geometrical properties of three-dimensional shapes and their properties using hands-on activities.

Materials Needed:

- Chromebooks
- Coloured markers
- Construction paper
- Paper (Netbook)
- Scissors
- Pencil
- Basket
- Tape

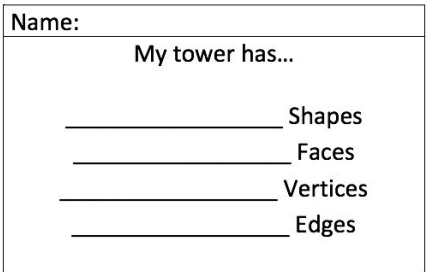


Minds On:

- Students will begin with an active and high energy Kahoot game to review what we have learned so far about two-dimensional and three-dimensional shapes. In groups of 2-3, students will select a team name and input the registered pin to begin the quiz. The quiz will focus on the differences between the two concepts, the terminology and its characteristics.

Activity

- Students will use their 3D shapes and label faces, edges and vertices with different coloured markers. *(For example: blue for edges, oranger for vertices and red for faces).*
- Once students are complete we will come together and sit in a community circle on the carpet.
- Students will be asked to bring their shapes to the carpet.
- Have students in groups of 3-4 create a tower using all their three-dimensional shapes. Encourage them to stack their shapes accordingly to ensure stability.
- Have students collectively estimate how many faces, edges and vertices their are in total.
- In their groups of 3, each student in the group will be assigned the task to calculate the number of each attribute. *For example, one student will be in charge of calculating the total number of faces, another student calculated the total number of edges, and the final student will calculate the number vertices*. Collaboratively they must come up with the answer by filling in the corresponding worksheet.
- This is done in preparation to the culminating task where student will be asked to design and construct their own three-dimensional figure (robot, spaceship, castle or car).


Name:

My tower has...

_____ Shapes

_____ Faces

_____ Vertices

_____ Edges

Consolidation

- This worksheet will serve as an exit card. At the end of the class students will "tour the city" and observe, review and reflect on the towers and calculations created by their fellow classmates. Groups will be asked to put a check mark or circle any mistakes that may been seen on the "tour guide" (attributes worksheet).
- Peer evaluation is a great form of assess *as* learning, so students can learn and grow from each other.

Differentiation:

Enrichment

- If students are finished early, they will be asked to photograph their tower, using the Seesaw app, make an audio recording or video describing its attributes. Encourage students to use the stylus pen to label the attributes, colours and shapes included in their figure. Using the Seesaw program results in having a digital record that can be transferred to a different teacher. Seesaw, also provides parental access, so they can be aware and catch a glimpse of what their child is doing.

Learning Supports (Accommodations)

- For those are struggling they will have access to the three-dimensional shape anchor chart to help with the calculations.
- Students can work collaboratively.
- Students will have access to headphone and, fidget toys if classroom environment is affecting learning.

Adaptations (Modifications)

- Student will have the option to fill out a corresponding worksheet, on a Chromebook or iPad for speech-to-text applications will be available.
- Students may also have the option to orally present their tower and its attributes.
- Net Books will be encouraged to use as a reference for students who need support.

Integration of Technology:

- Technology is integrated in the lesson through the use of chromebooks and the Smartboard during the beginning of the class. The Kahoot game is a fun way to keep students engaged while reviewing curriculum content.

Assessment:

- Peer evaluation is a great form of assess *as* learning, so students can learn and grow from each other.

- The worksheet also acts as a assessment *for* learning. Ensuring that students are aware and comfortable with identifying attributes of their three-dimensional shapes. Students have the option to present their figures virtually on their digital profile, or orally to the class. However, this activity is meant to be a short and sweet lesson to prime for the culminating task.