



What is an Invention

Lesson Overview

Introduce your students to what makes something an invention. Take your students on a walk around your classroom, school, or home having students identify inventions and the problems they solve. Students will put these inventions into categories and explain their favorite inventions and why they chose these inventions.

Lesson Objectives

Students will be able to:

- Define “invention”.
- Identify objects within the school/home setting that are inventions.
- Categorize inventions.
- Understand and describe what makes something an invention.

Materials

- PowerPoint
- Chalkboard/wall space/online place to record brainstorming
- What is an Invention worksheet

Learning Plan

Classroom Lesson:

Warm-Up (5 minutes)

Ask students, “What is an invention? What makes something an invention?” Have students share their answers with the class and write their ideas on the board for the whole class to see. There is no need at this point to provide a formal definition of ‘invention,’ but consider all answers as possible definitions.

Definition of Invention Activity (30 minutes)

Share the definitions of invention with the class from the PowerPoint.

Read “Inventive Thinking and Creativity” – they can read the entire page or excerpts from the article. Have students summarize some of the stories and connect these stories to the definition.

Virtual considerations:

Brainstorming the definition of invention

Brainstorm inventions in a class discussion or use a shared document where students can type their thoughts. Students can also share their ideas in the chat.

Brainstorm inventions using a post-it online platform, like Nearpod.

Brainstorm with a partner, using a shared document or Zoom breakout rooms.

Ask the class which of the following are inventions: cellphones, fire, toothbrushes, sneakers, electricity, cars, dirt, and trees. Ask them why the other things on the list are not inventions.

An Example of Invention Activity (5 minutes)

Provide students an example of an invention within the classroom. (You may choose to use the example SmartBoard/computer on the PowerPoint or develop your own example.)

Ask students the following questions:

- o What is this?
- o What does this invention do?
- o What do we use it for in our classroom?
- o What problem does this invention solve?
- o What would happen if we did not have this invention?

Invention Walk-About Activity (20 minutes)

Have the class walk around the classroom and/or school, writing down inventions that they see, possible problems that these inventions solved, and how school may have changed as a result of these inventions. You may want to plan a route for your students prior to the activity. Make sure they have a safe place to walk around, free of clutter and personal belongings.

The students should work in groups or pairs to find as many inventions as they can (approximately 10) and use the provided worksheet to organize their ideas.

Categorizing Inventions Around the Classroom Activity (10 minutes)

Once every student has a good list of inventions (approximately 5-10), use the students' worksheets to group their ideas into categories on the board.

Categories may include:

- o Simple inventions vs. complex inventions
- o Inventions used frequently vs. those used infrequently
- o New invention vs. old inventions
- o Inventions used only in school vs. those that could also be used at home
- o Students can use different colored highlighters to categorize their own inventions using these categories or use the separate worksheet.

Frayer Model Activity (10 minutes)

Students should create a Frayer Model using the word 'invention'.

Closure/Exit (10 minutes)

Read a definition and article about invention

Post the article online for students to retrieve and read.

Ask students which items are and are not inventions through class discussion or a shared document.

Identifying items as inventions

Display an item (a picture of a SmartBoard, lap top, etc.) and questions on a shared PPT.

- What is this?
- What does this invention do?
- What do we use it for in our classroom?
- What problem does this invention solve?
- What would happen if we did not have this invention?

Teacher can circulate students through breakout rooms for peer discussions with different inventions.

Students can choose objects from their house and answer the questions.

Student Walk-About Identifying Inventions

Students can walk around their homes, writing down inventions that they see, possible problems that these inventions solved, and how life may have changed as a result of these inventions.

Students can share their findings on a shared drive and/or as part of an online meeting.

Categorizing Inventions

Students can categorize inventions on a PPT or on a post-it online board.

Ask students to identify inventions they use at home. Students should identify the problems they solve. Students can also identify objects at home that are not inventions.

Assessments

- Class brainstorm ideas
- Group discussions
- What is an Invention Self-Assessment
- What is an Invention Worksheet
- What is an Invention Frayer
- Lesson rubric

Model

Invent it
forward.
PIL

Content Standards

Next Generation Science Standards:

Science and Engineering Practice 1:

Asking questions (for science) and defining problems (for engineering).

Science and Engineering Practice 8:

Obtaining, evaluating, and communicating information.

Common Core ELA Standards:

CCSS.ELA-LITERACY.CCRA.SL.1:

Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-LITERACY.CCRA.R.1:

Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCSS.ELA-LITERACY.CCRA.R.7:

Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.