

Sherlock Gnomes

Engineering and Animation, 1st Grade Teacher Guide

Objective

Students will be able to analyze the 5-step animation process to generate systems and tools to improve its efficiency.

Introduction

When creating an animated sequence, movie studios use a 5-step process that transforms an idea into a fully-realized animation. The Production Team consists of a group of artists working through each of the 5 steps: Storyboarding, Blocking, Animation, Pre-Lighting, and Final Lighting. This process can go on for 2-3 years when artists are working on a feature film. While each step happens sequentially, there may be times when the artists have to re-work scenes or develop new ones, which requires a return to the beginning steps of the process. Often, the Marketing Team will work with the Production Team to identify the first complete scene that can be used in a process called "Market Research," where the Marketing Team shows the scene to many people to determine the interest in the movie. Based on their feedback, the Marketing Team will work with the Production Team to revise parts of the movie.

Activity

This activity will lead students to exercise higher-order thinking skills by leading them through a series of scaffolded activities.

Remember: Distribute Worksheet 1-A and play "Animating Sherlock Gnomes" video for students, pausing where necessary. As each step is introduced, have students draw a picture that represents each process in the 5 boxes.

Formative Assessment: Ask students to hold up fingers in response to questions you ask about the 5-step process. "How many steps are in the animation process?" "During what step do the artists start to add light?"

Understand: Direct students' attention to the middle section of the worksheet that details the days required for each step in the process.

Apply: Ask students the following questions and have them discuss their answers with peers. "What are the artists doing during the 12 days of blocking?" "Storyboarding takes the longest time. What about this step needs extra time?"

Math Connection: Have students circle the step that takes the most time, put a box around the step that takes the least time, and complete the addition problems below.

CCSS.MATH.CONTENT.1.OA.A.1

Share with students that the Production Team who created *Sherlock Gnomes* had to think really hard about the animation process and who would work on each step. When people create and organize steps in a process, they are engaging in **engineering**. Tell students that they will now start learning how to "think like an engineer" by creating their own animation process.

Based on their understanding of each step of the process, ask students to draw a picture of the people from the Production Team they would need to make their own movie.



Analyze/Evaluate: Ask students to consider the people they have working on their team and the amount of days each step takes. Have the students choose one step they feel needs to be improved and circle their answer.

Create: Instruct students to think about a tool that will help them do one task more quickly. Ask students to draw a picture of the tool showing how it will be used by the artists on the Production Team. Finally, have students write to explain their drawing.

Summative Assessment: Evaluate student drawings and writing and/or have the students verbally explain their drawings. Determine if the drawings exceed, meet, or approach standards. Implement the suggestions to group students and expand the lesson, if you wish.

Exceeds Standards: Drawing includes a tool rendered with multiple features that address specific needs of the animation step.

Have students create a tool that would help the process in which materials are sent from one step to the next.

Meets Standards: Drawing includes a tool rendered with one or two features that address general needs of the animation step.

Have students switch drawings with a friend. Instruct students to re-do their friend's drawing by adding in one feature that would make the tool more effective.

Approaching Standards: Drawing does not include a tool or includes a tool rendered without features that address the needs of the animation step.

Have students evaluate their bookbag, jacket, or other personal item. Instruct them to draw a picture of the item with one additional feature that would help them in their daily life.

Duration 1 hour

Standards **Next Generation Science Standards**
K-2 ETS1-1
National Core Arts Standards
MA:Cr.2.1.1

Differentiation

Advanced students can be asked to consider a single tool that would help improve multiple steps of the animation process.

Beginning students can be asked probing questions to assist their thought processes.
Eg: *"What do artists do when storyboarding?" "When they are drawing their storyboards, what tools do they use?" "How can you change that tool to make it draw faster?"*

Beginning students can be given a specific tool to improve: "design a pencil that can draw faster" or "design a computer program with three buttons that will automatically animate characters."

Vocabulary**Tier 2**

Animate
Artist
Process
Engineering

Tier 3

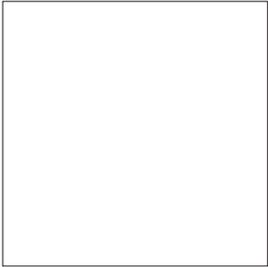
Production Team
Marketing Team
Market Research

Sherlock Gnomes

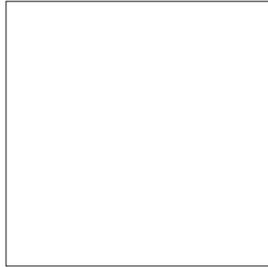
Name _____

Engineering and Animation, Worksheet 1-A

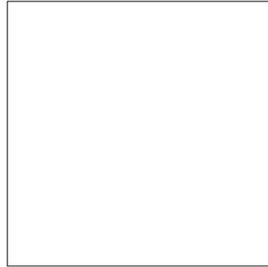
Draw a picture and write the name of each step.



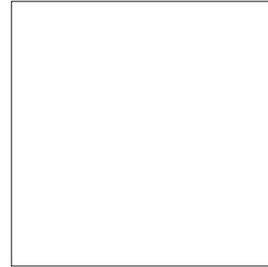
step 1



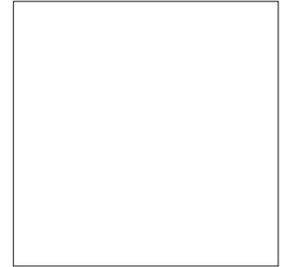
step 2



step 3



step 4



step 5

Circle the step that takes the most time. Put a box around the step that takes the least time.

step 1 12 days

step 2 9 days

step 3 8 days

step 4 5 days

step 5 6 days

Kayla works on step 1 and step 5. How many days does she work all together?

_____ days

Joel works on step 4 and Lupe works on step 1. Who works more days?

Marvin works on step 4 but is sick for one day. How many days does he work?

_____ days



Sherlock Gnomes

Name _____

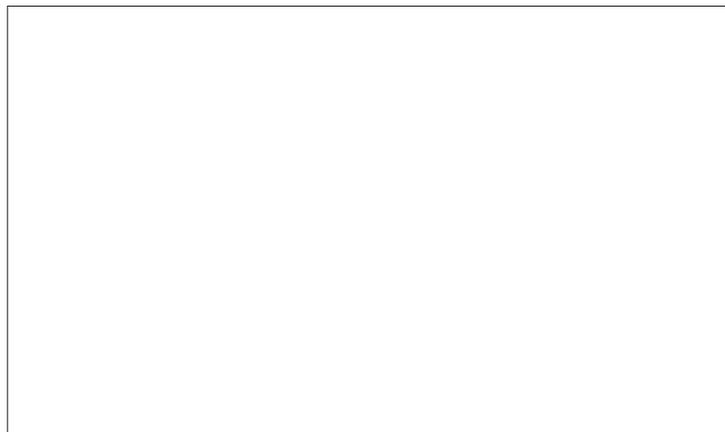
Engineering and Animation, Worksheet 1-A

Draw a picture of the people who can help you make a movie. Who works on each step?



Draw a tool that can help you do one of the steps faster. Circle the step where the tool will be used.

- step 1
- step 2
- step 3
- step 4
- step 5



What does this tool do? _____

