

## Calder Mobiles of Organism Functions

THEME	CONTENT	ART
When are we?	HS-LS1-2	VA:Cr1.2.IIa

### KEY VOCABULARY

- Organism
- Function
- Growth
- Movement
- Reproduction
- Respiration
- Nutrition
- Excretion

**PACING:** 1-2 DAYS

### ASSESSMENT (Formative):

Calder Mobile of Organism Functions

### ELEMENTS OF ART/MUSIC, ETC:

- Form
- Shape
- Space
- Color

### MATERIALS LIST

- Printed Color Images of Calder's Artwork from the Resource Document
- Plain Paper
- Drawing Utensils
  - Colored Pencils
  - Markers
- Straws
- String
- Paper
- Scissors
- Any other art supplies you can find

### LESSON OBJECTIVE

Students will select a specific organism to learn about its specific organism functions.

### ESSENTIAL QUESTION

Why are Calder Mobiles good representations of organism functions?

### 21st CENTURY SKILLS:

- Critical Thinking
- Creative Thinking
- Collaborating
- Initiative
- Communicating
- Media Literacy
- Informational Literacy
- Tech Literacy
- Flexibility
- Social Skills
- Leadership
- Productivity

### CONTENT STANDARDS:

HS-LS1-2

Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

### ARTS STANDARDS:

VA:Cr1.2.IIa

Choose from a range of materials and methods of traditional and contemporary artistic practices to plan works of art and design.

## WARM-UP OPTIONS (10 MIN)

- 1-Brain Connect
- 2-Color
- 3-Drawing Practice

- 4-Lettering
- 5-Line Poem
- 6-Pencils

- 7-Picture This
- 8-Sketch Stretch
- 9-Sketching from Life

## LESSON OVERVIEW

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In this lesson students will learn about the six organism functions: growth, movement, reproduction, respiration, nutrition, and excretion. Students will also investigate Alexander Calder and his mobiles. In the final assessment piece, students will choose an organism, research its specific organism functions and create a Calder Mobile to display what they learned. They will be able to choose their own materials and must include a written explanation of why a mobile is a good representation of organism functions.

## ENGAGEMENT

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### Mirror Drawing

1. Students should be arranged in groups of approximately four. Each group should be given a printed image of one of Alexander Calder's artwork (preferably in color if necessary). Each group should also have blank paper and drawing utensils.
2. Give the groups one minute to silently study their artwork.
3. When the time is up, collect all of the images and give students 2 minutes to recreate the image they were given.
4. It is up to you whether you tell students that they will be drawing what they see before they start studying the image or not. The purpose of this activity is to introduce students to Calder's work in a fun way.

## STEP 1

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### Students Define the Six Organism Functions

1. Split students up into six groups. Each group will be in charge of researching a organism function: growth, movement, reproduction, respiration, nutrition and excretion.
2. Students may use their textbooks and/or laptops or other devices made available to them.
3. Each group must make a poster on what they found out. They should give examples and include drawings. These will be displayed around the room and will help students in their main assignment.

- When students are done, have them do a gallery walk. When you do a gallery walk, give students something specific to look for or do while looking at each poster. For this one, have students think about a specific organism and for each function think about how it applies to their chosen organism.

## ARTFUL THINKING ROUTINE

**Creative Questions Routine.** Have students analyze Blue Feather by Calder, a mobile created in 1948.

- Brainstorm a list of at least 12 questions about the artwork or topic. Use these question-starts to help you think of interesting questions:
  - Why...?
  - What are the reasons...?
  - What if...?
  - What is the purpose of...?
  - How would it be different if...?
  - Suppose that...?
  - What if we knew...?
  - What would change if...?
- Review your brainstormed list and star the questions that seem most interesting. Then, select one of the starred questions and discuss it for a few moments. (If you have the time, you can discuss more than one question.)
- Reflect: What new ideas do you have about the artwork or topic that you didn't have before?

*Artful Thinking by Project Zero is licensed under a Creative Commons AttributionNonCommercial 4.0 International License. Routine found here:*

<http://pzartfulthinking.org/>

## STEP 2

### Calder Jigsaw

- Students should be split into five groups. Each group will be reading about the following
  - [Calder Biographical Information](#)
  - [Kinetic Art](#)
  - [Calder's Mobiles](#)
  - [Post-war Art in America](#)
  - [Piet Mondrian Important Works \(an inspiration for Calder's Mobiles\)](#)
- Each of the links above leads to an article on each topic. Print enough copies for each student at the group to have one. Give students about 5-10 minutes to read the article and find the important information.
- Two ways to share out information.
  - Have one person from each group share aloud or draw out thoughts onto poster paper and present.

### Teacher-to-Teacher

Make sure that your directions for group work are very clear and you already have some procedures in place. Groups can quickly go awry, so make sure you are well planned to avoid any mishaps. Always have directions written down for students to see so they don't forget what they're supposed to be doing. And remember that timers are your friend!

- b. Send one person from each group to all the other groups to find out information and report back to their original group.

## MAIN ACTIVITY/PROJECT

Students will choose an organism to investigate its specific organism functions. It may be a good idea to split the class into groups and have them choose from within that group. Some groups could be mammals, reptiles, birds, etc. Their mobile should have 7 parts: 1 part describing what organism they chose and 6 parts representing each of the organism functions. They should be informative and also artistic. The mobile should be balanced and created so that it can be hung somewhere in the classroom or the hallway. Students must write an explanation of what they have created and why a mobile is a good representation of their organism functions. If time allows, students can present what they have created to the class.

**ESTIMATED TIME:** Students will most likely need to do some work for this project at home. It is up to you if they do the research at home, or the creation of the mobile at home. Either way, students should have 40-50 minutes of class time to work on this. You may also set aside about 20 minutes for a few students to do quick presentations.

## CLOSURE

### Cover It

Have students sketch a book cover. The title is Organism Functions. The author is the student. A short celebrity endorsement or blurb should summarize and articulate the lesson's benefits. Some students could work on this for a long time, so give a short time limit such as 10-15 minutes.

# ASSESSMENT FOR TEACHER

## SUBJECT: Earth Science

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Student created a mobile representing the six organism functions of their specific organism

- One part of the mobile describes the organism and has a picture of the organism \_\_\_\_\_/2 points
- Growth of the organism is described and artistically presented \_\_\_\_\_/4 points
- Movement of the organism is described and artistically presented \_\_\_\_\_/4 points
- Reproduction of the organism is described and artistically presented \_\_\_\_\_/4 points
- Respiration of the organism is described and artistically presented \_\_\_\_\_/4 points
- Nutrition of the organism is described and artistically presented \_\_\_\_\_/4 points
- Excretion of the organism is described and artistically presented \_\_\_\_\_/4 points
- The mobile is balanced and ready to be hung \_\_\_\_\_/2 points

Student wrote a 2-3 paragraph description of their mobile

- Fully described all aspects of their mobile \_\_\_\_\_/5 points
- Described why a mobile is a good representation of organism functions \_\_\_\_\_/2 points

Total \_\_\_\_\_/35 points

# GRADE: 11

## Calder Mobile of Organism Functions

STUDENT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

In this assignment, you will use what you have learned about Alexander Calder and Organism Functions to create a mobile. You will choose an organism to research and create a mobile describing its specific organism functions. Your mobile must have 7 parts: 1 part describing what organism they chose and 6 parts representing each of the organism functions. Each part should be informative and also artistic. The mobile should be balanced and created so that it can be hung somewhere in the classroom or the hallway. You must also write an explanation of what you have created and why a mobile is a good representation of organism functions. If time allows, you may be asked to present what you created to the class. Use the rubric below to guide your work.

Student created a mobile representing the six organism functions of their specific organism

- One part of the mobile describes the organism and has a picture of the organism \_\_\_\_\_/2 points
- Growth of the organism is described and artistically presented \_\_\_\_\_/4 points
- Movement of the organism is described and artistically presented \_\_\_\_\_/4 points
- Reproduction of the organism is described and artistically presented \_\_\_\_\_/4 points
- Respiration of the organism is described and artistically presented \_\_\_\_\_/4 points
- Nutrition of the organism is described and artistically presented \_\_\_\_\_/4 points
- Excretion of the organism is described and artistically presented \_\_\_\_\_/4 points
- The mobile is balanced and ready to be hung \_\_\_\_\_/2 points

Student wrote a 2-3 paragraph description of their mobile

- Fully described all aspects of their mobile \_\_\_\_\_/5 points
- Described why a mobile is a good representation of organism functions \_\_\_\_\_/2 points

Total \_\_\_\_\_/35 points



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