



Rio Grande Educational Collaborative

Before and After School Program Lesson Plan

TITLE OF LESSON: Catapult Challenge

DATE:

SITE NAME:

CLASS SIZE:

NAME(S) OF INSTRUCTOR:

DURATION OF LESSON:

CREDIT (website used/name of author): Kevin Saavedra

COMMON CORE STANDARDS: SL.K.3, SL.3.1.D, SL.5.1.C

LEARNING OBJECTIVES:

Students will understand the following:

- Explore and apply their knowledge of simple machines and physics
- Work as a team to discuss a design and realize it within a limited timeframe

ACTIVITY:

Instructional Sequence:

(Step by step instructions, should another instructor pick up and teach the lesson successfully)

Explain the challenge to students before letting them split up:

The challenge is to build a catapult out of the given materials that can perform well in three categories: accuracy, distance, and height. The catapults will be launching ping-pong balls. Refer to the material list and feel free to add or remove things as necessary. In terms of length, remember to keep things challenging by limiting the use of these items (don't give them a whole roll of tape, cut about two feet or whatever seems necessary).

Students will have 30 minutes to build, extending to multiple periods if more time is needed. If you have enough materials, allow them to work independently. If groups are needed, then make sure that the groups stay relatively small (no more than 5 kids). Circulate between the groups and prompt quiet students for their input or suggest to the rest of the group that they let those students launch the catapult.

Rules:

1. Students can modify the materials, but they can't use other materials around the classroom
2. Students can't launch the ball using a part of the body, it has to receive input indirectly. For example: Students can hit a lever with their hand, or drop a book on it, but they can't hold the ball in a cup and throw it.
3. Materials can't be replaced. When it's been modified, that's it.

Tests:

For each test, give the students 3 shots.

Distance:

Set up a way to measure distance (marking the place it landed with chalk, for instance).

Accuracy:

Place a container like a bowl across the space and try to get the ball inside. It counts if it bounces out, it just has to hit the target.

Height:

Stack up plastic cups, books, etc. to make a tower, or use a structure in the classroom. Get the ball over it.

MATERIALS:

The following materials or equipment needed for this lesson:

(Include special equipment request)

(Per group):

- Popsicle sticks (10)
- Tiny cup
- Large cup
- Paper (One 8.5"x11" piece)
- Glue stick
- Masking tape (2 feet)
- Rubber bands (5)
- Plastic spoon
- Blue tak

SIGNATURE: _____ **DATE:** _____

SITE SUPERVISOR'S SIGNATURE: _____ **DATE:** _____

INSTRUCTOR'S REFLECTION:

Reflection on the lesson given:

1. How many students participated in the lesson given? _____
2. Name(s) of instructors participated. _____
3. How long did your lesson take? (Amount of time) _____
4. How did the students feel about the lesson? _____
5. Did the students like the lesson? _____
6. What part of the lesson did the students like? _____

7. What part of the lesson did the students not like? _____

8. Were the students interested in the topic of the lesson? _____
9. Was the content of the lesson difficult for the students? _____
10. What could you have changed to make the lesson interesting? _____

11. Did you have any trouble getting your lesson together? (Idea & Materials) _____

12. How do you rate your lesson? (1-10) Why? _____

SITE SUPERVISOR'S REFLECTION:

Reflection on the instructor's lesson:

1. How many students participated in lesson? _____
2. How many instructors participated in lesson? _____
3. Did the students enjoy the lesson? _____
4. What part did the students enjoy? _____

5. What part did the students NOT enjoy? _____

6. What could have been changed to make the lesson interesting? _____

7. Was the content of this lesson difficult for students to understand? Why? _____

8. What part of STEAM or literacy was used? (Science, Technology, Engineering, Art, Mathematics or Literacy)

9. Comments: _____

