



**Texas  
Essential  
Knowledge  
& Skills**

# PBL – Presentation

Middle School



## **ELA 6.28 - Listening and Speaking/Teamwork.**

*Students work productively with others in teams. Students will continue to apply earlier standards with greater complexity. Students are expected to participate in student-led discussions by eliciting and considering suggestions from other group members and by identifying points of agreement and disagreement.*

## **ELA 6.27 - Listening and Speaking/Speaking.**

*Students speak clearly and to the point, using the conventions of language. Students will continue to apply earlier standards with greater complexity. Students are expected to give an organized presentation with a specific point of view, employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively.*

## **Math 6.2D Number and operations.**

*The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:*

- (D) order a set of rational numbers arising from mathematical and real-world contexts;

## **Math 6.4C 6.5A - Proportionality.**

*The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:*

- (A) represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions;
- (C) give examples of ratios as multiplicative comparisons of two quantities describing the same attribute;

[www.YouCanDoTheCube.com](http://www.YouCanDoTheCube.com)

**Math 6.8D - Expressions, equations, and relationships.**

*The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is expected to:*

determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.

**Math 7.9D - Expressions, equations, and relationships.**

*The student applies mathematical process standards to solve geometric problems.*

(D) solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net

**Objective**

1. Understand solution guide enough to analyze it and re-write it in simpler terms (for younger students)
2. Work cooperatively in groups
3. Apply technology skills by creating a website or PowerPoint to illustrate points
4. Organize thoughts and create "talking points" for presentation, focusing on proper communication skills

**Scenario**

"So, you've solved the Rubik's® Cube- now what? You want to spread the knowledge, fun, and power of solving the Rubik's Cube with elementary school students. Their teacher hasn't tried to teach them because she feels it would be too difficult. Your job is to convince her otherwise! She has agreed to meet with you for 10 minutes during her planning period."

## Task

### **Create a presentation for the teacher that includes:**

- A breakdown of the solution guide for your targeted grade level
  - You may want to create a new guide for younger students, or additional pages as an amendment that will help younger students read the guide.
  - Tip: Make a list of what stumped you and what was helpful when reading the guide
- A webpage or digital presentation to illustrate your argument
  - Include pictures
  - Tip: You may want to interview your teacher that taught you how to solve the Rubik's Cube to get their perspective
  - Tip: Visit the website for educators- [www.youcandothecube.com](http://www.youcandothecube.com)

### **You will present your solution guide (new guide or supplemental information) and webpage/digital presentation to your class and will be graded on the following criteria:**

- Organization
- Subject Knowledge
- Public Speaking
- Group Participation
- Webpage/Digital Presentation

## Evaluation:

RUBRIC	4	3	2	1
<b>ORGANIZATION 15%</b>	We present our data and plan in a clear and logical sequence that is complete and easy to follow.	We present our data and plan in a logical sequence that is complete and relatively easy to follow.	We present our data in a manner that is complete, but its disorganization often makes it difficult to follow.	Our presentation is incomplete and/or disorganized.
<b>SUBJECT KNOWLEDGE 30%</b>	We demonstrate our understanding of the mathematical concepts related to the Rubik's Cube with explanations that are clear, thorough, and mathematically correct.	We demonstrate our understanding of the mathematical concepts related to the Rubik's Cube with explanations that are mathematically correct.	We demonstrate our understanding of the mathematical concepts related to the Rubik's Cube with explanations that are primarily mathematically correct.	We are unable to adequately answer questions related to the mathematical concepts of the Rubik's Cube.
<b>PUBLIC SPEAKING 15%</b>	We speak so that our presentation can clearly be heard; we use proper grammar and correct pronunciation; we appropriately use mathematical vocabulary to demonstrate an understanding of the terms.	We speak so that our presentation can generally be heard; we generally use proper grammar and correct pronunciation; we use mathematical terms properly.	We speak softly so that our presentation is difficult to hear; at times, our use of grammar and pronunciation detracts from the presentation; we use mathematical terms appropriately, but infrequently.	We speak softly so that our presentation is difficult to hear; our use of grammar and pronunciation detracts from the presentation; we seldom use mathematical terms, or use them inappropriately.
<b>GROUP PARTICIPATION 15%</b>	Each member of our group participated with relatively equivalent roles.	Each member of our group participated, but our roles were not equivalent.	Each member of our group participated, but not all spoke.	Not all members of our group participated in the presentation.
<b>WIKI/WEBSITE or POWERPOINT 25%</b>	Our wiki/website or PowerPoint is designed to explain and support our argument and presentation.	Our wiki/website or PowerPoint is related to our presentation.	Our wiki/website or PowerPoint often distracts from our presentation.	Our wiki/website or PowerPoint is unrelated to our argument or presentation
<b>Total Score</b>	<b>_____ / 20</b>			