

Discussion Questions
Math in Action Video: Sculpture
Sculptor – Mary Ann Mears

Duration 4:43

Before Viewing the Video

To help your students enjoy and gain information from watching the video, consider preparing them by

- Giving students a purpose for watching
- Review the following vocabulary terms:
 - Scale Model
 - Line Tangent to a Curve
 - Perpendicular Lines
- Discussing:
 - How and why would you use a scale model to construct a full size object?
 - What can be said about ruler measurements in a scale drawing compared to the actual object?
 - What can be said about protractor measurements in a scale drawing compared to the actual object?

While Viewing the Video

Use the following times to stop the video and facilitate a meaningful discussion.

Pause Point #1: After the description of how math is used in sculpture design. (Time index 1:07)

Discussion Points:

Synopsis: Ms. Mears talks about some aspects of designing a sculpture that involve math.

Questions:

1. What specific math concepts are used in designing a sculpture?
2. How is the cost of materials related to the creation of models for the sculptures?

Pause Point #2: After the description of determining the scale for a model. (Time index 2:18)

Discussion Points:

Synopsis: Ms. Mears describes the process she uses to determine the scale for her model of the sculpture.

Questions:

1. How did Ms. Mears determine that she wanted to use a scale of 1.5 inches = 1 foot in her garden sculpture?
2. Besides the relation to people, what are some other factors that Ms. Mears considers when determining the scale for the model of her sculpture?

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Pause Point #3: After the demonstration of solving a problem several different ways. (Time index 2:40)

Discussion Point:

Synopsis: Ms. Mears says that she likes to solve problems more than one way.

Question: What are the benefits to solving problems several ways?

Pause Point #4: After placing the pieces at the Silver Spring site. (Time index 3:57)

Discussion Point:

Synopsis: Ms. Mears used several tools to determine where each piece of the sculpture should be placed.

Question: Describe the process that Ms. Mears used to determine the exact location of each piece of the sculpture.

Pause Point #5: At the end of the video (Time index 4:43)

Discussion Points:

Synopsis: Ms. Mears shares her views about why math is important.

Questions:

1. Why does Ms. Mears think that math is important for everyone to learn?
2. Do you agree that doing math “makes you smarter”? Explain your answer.