Discussion Questions
Math in Action Video: Urban Planning   Duration 4:52
Urban Planner – Alex Chen

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

- Reviewing the following vocabulary terms:
    - Area of a Circle
    - Density
    - Ratio

- Discussing: What do you think urban planners do?

While Viewing the Video

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

Pause Point #1: *After the opening description of an urban planner's job. (Time index 0:39)*

Discussion Point:

Synopsis: Dr. Chen talks about his job as an urban planner.

Question: What are the relationships that urban planners have to consider?

Pause Point #2: *After the description of the Box City game. (Time index 2:08)*

Discussion Points:

Synopsis: Dr. Chen describes the box city game.

Questions:
1. What are the benefits for the children who participate in the Box City game?

2. What are the benefits for the college students who participate in the Box City game?

Pause Point #3: *After the description of calculating the density function. (Time index 3:25)*

Discussion Points:

Synopsis: Riane McWain describes her involvement and Dr. Chen talks about the density function to determine the number of amenities per square mile.

Questions:
1. What parts of planning a city would Ms. McWain be likely to consider if her focus is economic development?

2. How is the density function calculated?

3. Why is it important to understand and use a density function?

Pause Point #4: *After the description of using the GIS. (Time index 4:09)*

Discussion Points:

Synopsis: Dr. Chen talks about the technology that urban planners have available to them.

Questions:
1. What type of technology do urban planners use and what does it allow them to do?

2. What does Dr. Chen mean when he says that the intersection of math and technology is GIS?

Pause Point #5: *At the end of the video. (Time index 4:52)*

Discussion Points:

Synopsis: Dr. Chen reflects on the idea that understanding the concepts in math builds on itself, giving you a pyramid of knowledge that can be applied in many ways.

Questions:
1. Why do you think that Dr. Chen believes that mathematical knowledge forms a pyramid?

2. What do you think forms the base of the pyramid? What is at the top?

3. How do Ms. McWain's comments about math relate to Dr. Chen's description?