

**Related Practice – Answer Key**  
**Math in Action Video: Architecture**  
**Architect – Eric Beck**

**Directions:** Use the following activities to enhance students' experience with Math in Action videos and reinforce math concepts.

**Math in Action: Scale Drawings**

Using a scale of  $\frac{1}{4}$  inch = 1 foot, determine the length on a paper drawing of a room that is 20 feet long.

**Answer:**

$$\frac{0.25 \text{ inches}}{x \text{ inches}} = \frac{1 \text{ foot}}{20 \text{ feet}}$$

$$1x = 5$$

$$x = 5 \text{ inches}$$

**Math in Action: Volume of a Pool**

Find the volume of the pool shown in the video. The pool has a radius of 10.5 feet and is 4 feet deep.

$$V = \pi r^2 h$$

**Answer:**

$$V = \pi(10.5 \text{ feet})^2(4 \text{ feet})$$

$$V \approx 1385.442 \text{ feet}^3$$

or using 3.14 as the value for  $\pi$ ,

$$V = 1384.74 \text{ feet}^3$$

If the pool has 7.48 gallons of water per cubic foot, how many gallons of water will be needed to fill this pool?

**Answer:**

$$1385.442 \text{ ft}^3 (7.48 \text{ gal/ft}^3) \approx 10363.106 \text{ gallons, so about 10,363 gallons}$$

or

$$138.74 \text{ ft}^3 (7.48 \text{ gal/ft}^3) \approx 10357.855 \text{ gallons, so about 10,358 gallons}$$

**Math in Action: Designing a Building**

Use graph paper and a scale of  $\frac{1}{4}$  inch = 1 foot to design your dream house. Determine the actual area of each room

**Student answers will vary.**