



The Virgo Supercluster Lesson Plan

Time: 40 minutes

Goals: To gain an understanding of the content, structure and distances to the galaxies in the Virgo Supercluster.

Objectives: Students will:

- Watch the “Virgo Supercluster” segment of the “How far away is it” video book
- Take a short quiz

Materials:

- Internet connection with a computer for viewing [“The Virgo Supercluster” segment on YouTube](#)

Directions:

- Introduce the ‘Virgo Supercluster’ segment as our first view large enough to see that galaxies are not scattered randomly across the cosmos. Point out that galaxies in this local supercluster enabled us to see that the Universe is expanding.
- Show the video.
- Review what they saw:
 - How galaxies group into galaxy clusters.
 - How galaxy clusters group into galaxy clouds.
 - How galaxy clusters and galaxy clouds group up into superclusters.
 - How we found that the Universe is expanding.
 - How Hubble’s law was developed.

Assessment:

Take a simple quiz. Print and distribute the quiz on page 2. Here are the answers:

- The current best value for the Hubble Constant is 13.6 miles/sec per million-light-years. The galaxy M77 is moving away from us at 680 miles per second. How far away is it?
Answer: b) 50 million light years.
- If galaxies are getting further apart as time moves forward, what was happening as time moved backwards?
Answer: c) They were getting closer together.
- What is the name of our final Distance Ladder rung?
Answer: d) Red Shift.



The Virgo Supercluster quiz

- The current best value for the Hubble Constant is 13.6 miles/sec per million-light-years. The galaxy M77 is moving away from us at 680 miles per second. How far away is it?
 - a) 5 million light years
 - b) 50 million light years
 - c) 500 million light years
 - d) 5 billion light years
- If galaxies are getting further apart as time moves forward, what was happening as time moved backwards?
 - a) They were also moving further apart.
 - b) They were holding their current distances.
 - c) They were moving closer together.
 - d) They are not moving
- What is the name of our final Distance Ladder rung?
 - a) Type 1a Supernova
 - b) H-R Diagram
 - c) Cepheid variables
 - d) Red Shift

