

Engage	Explore	Explain	Elaborate/Extend	Evaluate
<p>The purpose for the ENGAGE stage is to pique student interest and get them personally involved in the lesson, while pre-assessing prior understanding.</p>	<p>The purpose for the EXPLORE stage is to get students involved in the topic; providing them with a chance to build their own understanding.</p>	<p>The purpose for the EXPLAIN stage is to provide students with an opportunity to communicate what they have learned so far and figure out what it means.</p>	<p>The purpose for the EXTEND stage is to allow students to use their new knowledge and continue to explore its implications.</p>	<p>The purpose for the EVALUATION stage is for both students and teachers to determine how much learning and understanding has taken place.</p>
<p>✓ How many planets are there?</p> <p>As of 7/3/14 - As per the <a href="#">Kepler Space Telescope Mission Website: Confirmed Planets 977</a>, Planet candidates 4237 (Project this website with current exoplanet count.</p> <p>✓ Socrative - Our sun is:                  ✓ What temperature? 5,780 K (5,504.85 Celsius)                  Kelvin = Celsius + 273.15                  ✓ How many miles from earth? 92,960,000 miles (149,600,000 km) (1mi = 1.6093440 km)                  ✓ Diameter of earth? 7,918 miles (12,742 km)                  ✓ Diameter of sun? 864,000 miles (1,390,473.22 km)</p>	<p>✓ Socrative: Are all stars the same size and temperature as our sun? (Y/N)</p> <ol style="list-style-type: none"> <li>1. Open Hertzsprung-Russell diagram-schematic.</li> <li>2. Review seven letter designations of stars.</li> <li>3. Demonstrate teacher selected star while defining: telescopic view, transit, star type data “spectral type”, “star’s mass”, “star’s radius”, star’s temperature in Kelvin, orbital period, percentage of brightness drop, distance of planet from its star in AU (astronomical units), exoplanet surface temperature and exoplanet radius.</li> </ol>	<ol style="list-style-type: none"> <li>1. Demonstrate transit with lightbulb and ball on string.</li> </ol> <p>✓ Describe what you see happening.</p> <p>✓ When a planet passes directly between its star and an observer, it dims the star’s light by a measurable amount.</p> <ol style="list-style-type: none"> <li>2. <a href="#">View NASA Planet Quest Interactive: 5 Ways to Find a Planet.</a></li> </ol>	<ol style="list-style-type: none"> <li>1. Student are each assigned a specific star to investigate.</li> <li>2. Conduct an “<a href="#">Exoplanet Transit Hunt</a>” using the <a href="#">online Kepler Interactive Tool</a> to calculate the properties of the exoplanet.</li> <li>3. Create screenshot (⌘ shift 4 then pull frame) of completed star chart.</li> <li>4. Rename screenshot ClassNameLastnameFirstInitialProjectName.png (e.g. OrionMistrettaSExoplanet.png)</li> <li>5. Record data in Numbers Spreadsheet.</li> </ol>	<ol style="list-style-type: none"> <li>1. Student repeats transit hunt for their star and records their screen and voice using Quicktime while stepping through calculations on the screen. Student may use their Numbers Spreadsheet notes. (Quicktime Rubric)</li> <li>2. Quicktime file is compressed and uploaded to homework site.</li> <li>3. Star Data Screen shot is renamed and uploaded to homework website.</li> </ol>