

Title:	Components of the Solar System
Grade(s):	4
Subject(s):	Science
Author:	ICAC Team
Overview:	<p>The teacher will provide background material about the solar system. The students will write an essay incorporating descriptions of components of our solar system. The students will use Microsoft Word to write the essay.</p>
Content Standards:	<p>SC (4) 10. Describe components of our solar system.</p> <p>TC (3-5) 1. Use input and output devices of technology systems.</p> <p>TC (3-5) 2. Use various technology applications, including word processing and multimedia software.</p> <p>TC (3-5) 12. Create a product using digital tools.</p> <p>ELA (4) 12. Organize information on a specific topic obtained from grade-appropriate reference materials.</p>
Local/National Standards:	
Primary Learning Objectives:	<p>Using Microsoft Word, students will compose descriptive essays about components of the solar system that include accurate and complete information on the location, composition, and physical properties of the solar system component. The essays will be illustrated with at least 2 pictures or graphics.</p>
Additional Learning Objectives:	
Approximate Duration of Lesson:	1 hour
Materials and Equipment:	Science books, magazines, photographs of the solar system
Technology Resources Needed:	Computer with Microsoft Word, Internet connection (optional)
Background/Preparation:	Knowledge of the components of the solar system.
Procedures/Activities:	<p>Step 1 Write the following components of a solar system on the board or overhead. Ask students if they can define and describe characteristics of the solar system:</p> <ul style="list-style-type: none"> • Comets are small masses of dust and ice that orbit the sun in a long, oval-shaped path. • Asteroids are small and rocky and most are scattered in a large area between the orbit paths of Mars and Jupiter in what is called the asteroid belt.

- **Inner planets**, such as Earth and its three neighbors, are objects that orbit around the sun inside of the asteroid belt.
- **Outer planets** are those planets that orbit the sun outside of the asteroid belt and tend to be gaseous, icy, and have rings.
- **Star**, such as our sun, is a ball of different gasses and plasma held together by gravity and emits, rather than reflects, light.
- **Moons** are objects that are similar to planets but much smaller, and they orbit planets rather than a star.

Step 2 Each group will have the opportunity to select or be assigned one of the components of the solar system listed above. The group will research their topic. They must produce an illustrated essay that includes the following information about their solar system component:

- location (orbit, distance from the sun)
- composition (gas, rocks, water)
- physical properties (size, temperature)
- two or more illustrations

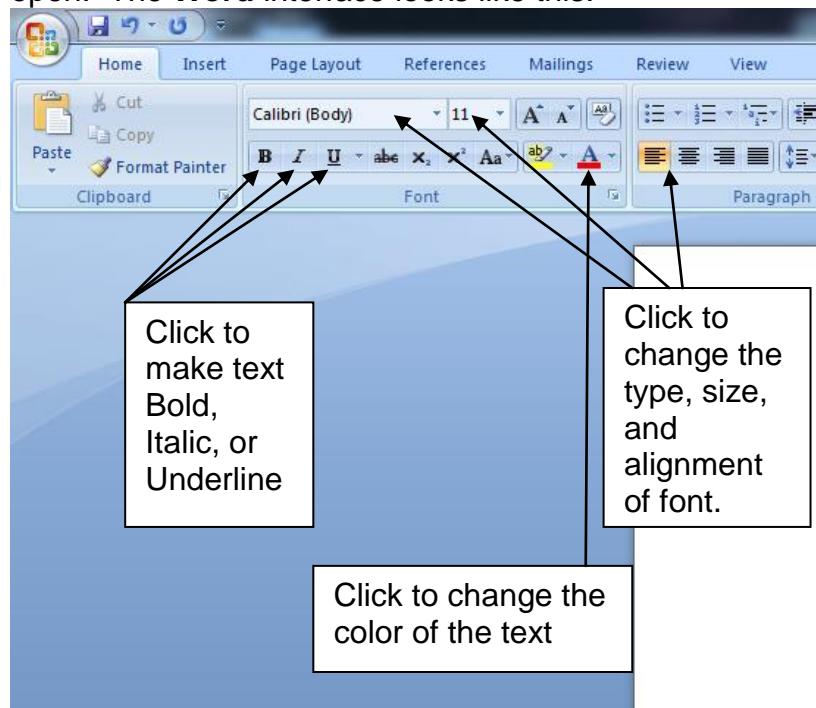
Step 3 A digital camera should be used to take pictures to be used in the essay. These can be pictures from the student's textbook, pictures of the sky, pictures drawn by the student, or from other sources.

Step 4 If an internet connection is available the student can also use images from the Internet.

Open Microsoft Word. To insert an image, find where your pictures are located on your computer. If your digital camera is connected using a USB port, go to "My Computer" and the select the appropriate drive (for example, E: or F:). Right click on the picture you want to use, and select "Copy." Now, return to your Word document and point your cursor to where you would like your picture. Right click once again with your mouse and select "Paste."

Step 6

Once students are finished researching, it will be time to construct an essay. Microsoft Word should already be open. The **Word** interface looks like this:



The students should write an essay that incorporates a description of their assigned component of our solar system.

Have groups present their discoveries to the class or post on the class website.

Attachments:

Rubric

Assessment

See Attached Rubric

Strategies:

Provide students with the opportunity to further research solar system characteristics on the Internet. Allow students to choose a specific element of the solar system and then write a creative story from the point of view of an astronaut exploring that object in the solar system.

Extension:

Provide students with an outline for each section of the essay.

Remediation:

Assessment Rubric for *Components of Our Solar System*

Score	1	2	3	4
Essay Elements: <ul style="list-style-type: none"> • <i>Location</i> • <i>Composition</i> • <i>Physical Properties</i> • <i>Two Illustrations</i> 	Contains one accurate element.	Contains two accurate elements.	Contains three accurate elements.	Contains all four elements with accuracy.
Research & Organization	Little research was done, information was unorganized.	Research was done, but essay was poorly organized.	Good organization of researched information.	Excellent organization of researched information.
Technology Use	Did not share technology; Word document is incomplete.	Did not share technology well together; Word document has visual mistakes.	Shared technology responsibilities; created an acceptable Word document.	Shared technology responsibilities; created an exemplary Word document.