Informative/Explanatory Writing Performance Task

Teacher Version			
Grade	**5**	**Title/Subject**	**Our Solar System and the Sun**

The following sections are included in this Teacher Version:

- **Overview**
- **Process: Day 1 and 2**
- **Teacher Directions for Scoring Rubric and Student Directions and Articles**

Overview

On Day 1 students will engage in a shared reading and note-taking activity using two informative texts to learn about Our Solar System and the Sun. After the group activity, they will be directed to plan, and begin to draft an informative writing piece about Our Solar System and the Sun utilizing the information they read in the texts as well as notes they took during the shared lesson. On Day 2 students will finish their drafts, revise and edit their writing, and if they choose, produce a final copy.

Process

DAY 1: Shared Reading and Note-taking: Up to 40 minutes

Step 1: Connect to Background Knowledge ~ 5 minutes

Provide an introduction to the classroom activity by indicating that after this activity, students will be writing an essay focused on the topic of Our Solar System and the Sun. Ask students to share orally what they might know about Our Solar System and the Sun. Possible questions could include:

"Have you ever heard of Our Solar System and the Sun? Do you know how the solar system works? What does Earth need to survive?" Why is the sun important?

For active engagement encourage pair or group sharing, before sharing out with whole group.

Step 2: Accessing the Information ~ 35 minutes

1. Explain: *"Now we will read two sources about Our Solar System and the Sun."* Read both sources, pointing out important facts and features (pictures, captions, etc.) Use ONLY the sources provided in this prompt packet.
2. Lead a whole class discussion about the sources, during which students generate a key word list, list the "gist" next to each paragraph, highlight important words/phrases, or participate in pictorial narrative input (large teacher-created drawing with labels).
3. Think-Pair-Share: *"Tell your partner what you learned about Our Solar System and the Sun."* Make sure both partners have time to share with each other.

Step 3: Clarify Expectations for the Writing Task: ~ 5 minutes

Explain: *"In a few minutes you will have a chance to look at the sources, plan, and write a draft to explain to me what you learned about Our Solar System and the Sun. Tomorrow you will have a chance to change and edit your work from today to write a final revision."*

Review the student directions and checklist for the writing assignment and give each student a sheet of blank paper for planning and lined paper for writing.

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Process continued			

Planning and Drafting Writing: up to 40 minutes

Step 4: Clarify Expectations for the Writing Task: ~ 5 minutes

Tell students to begin planning their writing on the blank sheet of paper. You can remind them of planning strategies you have taught in your classroom such as outlining, lists, webs, or drawing. Don't provide a plan yourself, just remind them of the strategies for planning.

After 10 minutes suggest to students that they begin writing their drafts.

Collect all materials from Day 1 after the 40 minutes total is complete.

DAY 2: Up to 60 minutes

1. Allow students to access the sources, their notes, the classroom activity charts/key word lists, and their draft.
2. Students read the prompt and their draft from Day 1 to make revisions.
3. Students edit and write final revision of essay. Provide additional lined paper for revisions and final copies as needed. Students may have time to create a final copy, or may revise and edit from their draft as time allows.
4. At teacher discretion, students may use word processing for draft or revision as long as spelling and grammar correction tools have been disabled.
5. Inform students when 15 minutes remain.
6. Collect all student writing materials.

Teacher Directions for Scoring Rubric:

Student responses to Part 2 will be scored using the Common Core based Informative/Explanatory Writing Rubric. A score will be given in each of the three rubric categories. For grades 3-6, student **revisions** will be scored.

Each student's final scores should indicate a 1, 2, 3, or 4 in each of the three categories (no partial scores such as 2.5, 3+, etc.). A score of 3 or 4 in each category is considered a passing score and a total of 8 points or higher out of 12 total is considered a passing overall score.

The score for each of the three categories will be entered for each student into Illuminate.

Common Core Standards

Informative/Explanatory Writing Performance Task

Grade	5	Informative/Explanatory Writing Rubric

Level	INFORMATIVE/EXPLANATORY WRITING	LANGUAGE CONVENTIONS	WITH GUIDANCE and SUPPORT FROM ADULTS
4 Exceeds	☐ Meets all expectations in level 3 ☐ Uses strategies such as definition, classification, to organize ideas ☐ Both introduction and conclusion are clear and well stated ☐ Establishes and maintains a formal style	**Mostly correct** use of language conventions, and some above grade level skills used, for example: ☐ Meets all expectations in level 3 ☐ Varies sentence patterns for meaning, interest, and style ☐ Maintains consistency in style and tone	 Level of guidance and support from adults before writing: Check off what was done before the student wrote the piece being scored. ☐ Discussion ☐ Read aloud or shared reading ☐ Drawing ☐ Vocabulary word bank ☐ Shared or interactive writing ☐ Graphic organizer ☐ Language frames
3 Meets	**INFORMATIVE/EXPLANATORY WRITING** (W2) ☐ Introduces topic clearly and groups related information logically (W2a) ☐ Includes formatting (headings), illustrations/multimedia if they aid comprehension (W2a) ☐ Develops topic with facts, definitions, concrete details, quotations, other related information and examples (W2b) ☐ Links ideas with categories of information using words/phrases such as *in contrast, especially* (W2c) ☐ Uses precise language and domain-specific vocabulary to inform or explain the topic (W2d) ☐ Provides a concluding statement or section related to information/explanation presented (W2d) **WRITING PROCESS** (W4-W8) ☐ Uses clear and coherent writing in multi-paragraph texts that is appropriate to task, purpose, and audience (W4) ☐ **WGASFA*** Develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach (W5) ☐ **WGASFA*** Uses a variety of digital tools to write and publish writing (W6) ☐ Keyboards/types a minimum of two pages in a single sitting (W6) ☐ Participates in shared research projects that build knowledge through investigation of different aspects of a topic. (W7) ☐ Summarizes or paraphrases information in notes and finished work, and provides a list of sources (W8)	**Adequate** use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example: ☐ Uses verb tenses to show time, states, conditions; and uses noun-verb agreement correctly most of the time (L1) ☐ Uses punctuation to separate items in a series (L2a) ☐ Uses a comma to separate an introductory element from the rest of the sentence (L2b) ☐ Uses a comma to set off the words yes and no, to set off a tag question, and to indicate direct address (L2c) ☐ Uses underlining, quotation marks, or italics to indicate titles of works (L2d) ☐ Spells grade-appropriate words correctly, consulting references as needed (L2e)	
2 Almost Meets	☐ Introduces topic and includes information, but development of facts and details is limited ☐ May not write multi-paragraphs ☐ Uses some linking words/phrases, and limited vocabulary choice ☐ Has incomplete or minimal planning for writing	**Limited** use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example: ☐ Uses verb tenses correctly some of the time. ☐ Uses some punctuation correctly ☐ Uses some sentence variety correctly ☐ Spells many words correctly	
1 Does Not Meet	☐ Introduces topic and includes few details or facts ☐ Copies sentences directly from text in articles in prompt ☐ Writes only single paragraph ☐ Has vocabulary that is simple and not aligned with topic ☐ Has little or no planning evident	**Infrequent** use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example: ☐ Writes few complete sentences or only simple sentences ☐ Has many errors in punctuation ☐ Has many errors in spelling and/or capitalization	

- **WGASFA**: "with guidance and support from adults"

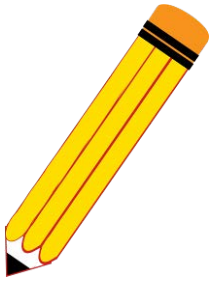
This rubric was adapted from rubrics at sbusd.org and information from Smarter Balanced Assessments (www.**smarterbalanced**.org) using the California Common Core Standards at www.cde.**ca**.gov.

Smarter Balanced Assessment Consortium

Informative/Explanatory Writing Performance Task

			Student Version
Grade	**5**	**Title/Subject**	**Our Solar System and the Sun**

Student Prompt:



As you think about what you just read, write a multiparagraph essay to explain to your teacher what you learned about Our Solar System and the Sun.

Writing Tips:

- ☐ Be sure to introduce the topic and group related facts together.
- ☐ Use facts from the two sources to develop your ideas.
- ☐ You may want to include definitions and illustrations to help your teacher clearly understand what you learned.
- ☐ End with a conclusion.

Reminders:

- ☐ You can look at the sources and your key word list to help you with your writing.
- ☐ You might begin by making a plan or drawing a graphic organizer help you with your thinking.
- ☐ Do not copy sentences from the sources.

Step 1: Plan

Plan: review the texts and your notes

- ☐ Make a plan on the blank paper for your writing.

Step 2: Draft

- ☐ Write a topic sentence with your main idea.
- ☐ Write sentences with several facts, definitions, and concrete details to develop points.
- ☐ Group information together as you write.
- ☐ Use linking words such as *also, another, and, more, but, another, for example, because, in contrast, especially* to connect ideas.
- ☐ Use precise language and domain-specific vocabulary to inform or explain your topic.
- ☐ Write a concluding sentence or paragraph.
- ☐ Provide a list of sources.

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Step 3: Reread and Revise

Reread your writing and revise:

- ☐ Does it make sense?
- ☐ Have you used science words from the text?
- ☐ Is there missing information you want to add?

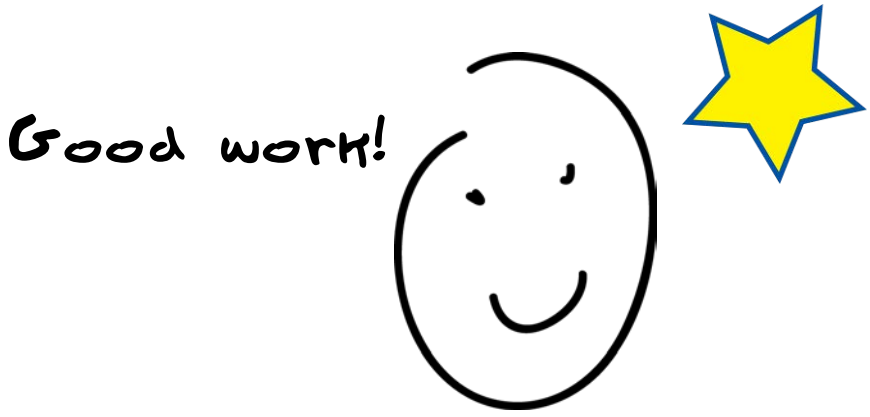
Step 4: Edit

Reread your writing and revise:

- ☐ Capitals at the beginning of sentences
- ☐ Capitals for proper nouns, holidays, titles, etc.
- ☐ Punctuation: (end points) **. ! ?**
- ☐ Commas **,** quotation marks **“ ”**
- ☐ Spelling
- ☐ Complete sentences (avoid fragments and run-ons)
- ☐ Use verb tenses to show time, states, and conditions
- ☐ Use underlining, quotation marks or italics to indicate titles of works

Step 5: Final Draft

- ☐ Recopy and fix your mistakes.



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citing sources:

Showing how you found your information

Book:

Author Last Name, Author First Name. *Title of book*. City of Publication: Publisher, Date of Publication.

Book with two authors:

Author Last Name, Author First Name and Author Last Name, Author First Name. *Title of book*. City of Publication: Publisher, Date of Publication.

Reference Book:

Author. "Title of article." *Title of Book*. Date of edition.

Magazine or Newspaper:

Author. "Title of article." *Periodical title* Date:Page.

Online Encyclopedia:

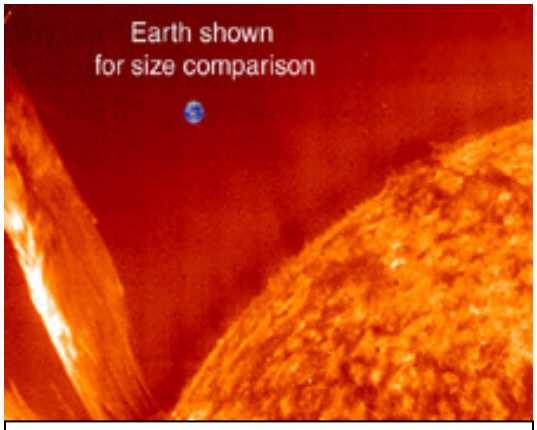
Author, "Title of article." Name of Encyclopedia Name of Publisher, Date of Publication, Date of your visit. Name of online subscription service hosting the encyclopedia.

World Wide Web:

Author, "Title of article." Title of complete work. Date of your visit <URL>.

www.TheCraftyClassroom.com

			Student Reading Text
Grade	**5**	**Title/Subject**	**Our Solar System and the Sun**



Earth compared to the sun.

10

Need-to-Know Things About the Sun

1. The sun is a star. A star does not have a solid surface, but is a ball of gas (92.1 percent hydrogen (H_2) and 7.8 percent helium (He)) held together by its own gravity.
2. The sun is the center of our solar system and makes up 99.8% of the mass of the entire solar system.
3. If the sun were as tall as a typical front door, Earth would be about the size of a nickel.
4. Since the sun is not a solid body, different parts of the sun rotate at different rates. At the equator, the sun spins once about every 25 days, but at its poles the sun rotates once on its axis every 36 Earth days.
5. The solar atmosphere (a thin layer of gases) is where we see features such as sunspots and solar flares on the sun.
6. The sun is orbited by eight planets, at least five dwarf planets, tens of thousands of asteroids, and hundreds of thousands to three trillion comets and icy bodies.
7. The sun does not have any rings.
8. Spacecraft are constantly increasing our understanding of the sun -- from Genesis (which collected samples of the solar wind and returned the particles to Earth) to SOHO, STEREO, THEMIS, and many more, which are examining the sun's features, its interior and how it interacts with our planet.
9. Without the sun's intense energy there would be no life on Earth.
10. The temperature at the sun's core is about 15 million degrees Celsius (27 million degrees Fahrenheit).

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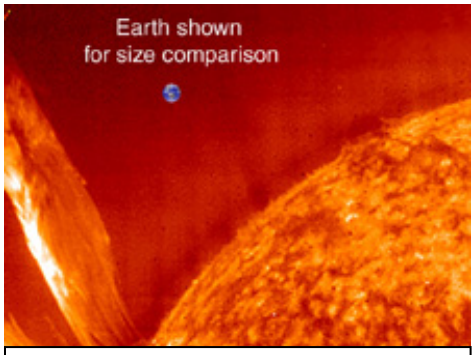
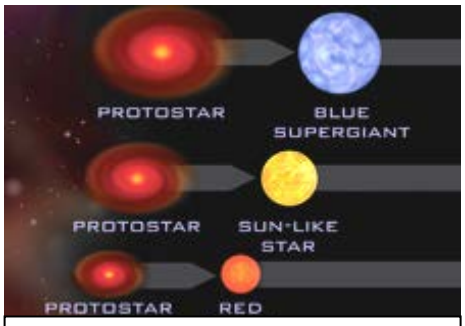
Our Solar System and the Sun

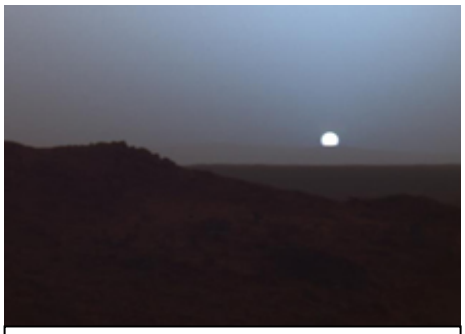
Our solar system's central star, the sun, has inspired mythological stories in cultures around the world, including those of the ancient Egyptians, the Aztecs of Mexico, Native American tribes of North America and Canada, the Chinese and many others.



Earth compared to the sun.



Our sun compared to other stars.



Sunset on Mars.

A number of ancient cultures built stone structures or modified natural rock formations to mark the motions of the sun and moon - they charted the seasons, created calendars and monitored solar and lunar eclipses. These architectural sites show evidence of deliberate alignments to astronomical phenomena: sunrises, moonrises, moonsets, even stars or planets. Many cultures believed that the Earth was immovable and the sun, other planets, and stars revolved about it. Ancient Greek astronomers and philosophers knew this *geocentric* concept from as early as the 6th century BCE. Now we know, of course, that all the planets orbit our lone star - the sun.

The sun is the closest star to Earth, at a mean distance from our planet of 149.60 million kilometers (92.96 million miles). This distance is known as an astronomical unit (abbreviated AU), and sets the scale for measuring distances all across the solar system. The sun, a huge sphere of mostly ionized gas, supports life on Earth. The connection and interactions between the sun and Earth drive the seasons, ocean currents, weather and climate.

About one million Earths could fit inside the sun. It is held together by gravitational attraction, producing immense pressure and temperature at its core. The sun has six regions - the core, the radiative zone, and the convective zone in the interior; the visible surface (the photosphere); the chromosphere; and the outermost region, the corona. The sun has no solid surface.

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At the core, the temperature is about 15 million degrees Celsius (about 27 million degrees Fahrenheit), which is sufficient to sustain thermonuclear fusion. The energy produced in the core powers the sun and produces essentially all the heat and light we receive on Earth. Energy from the core is carried outward by radiation, which bounces around the radiative zone, taking about 170,000 years to get from the core to the convective zone. The temperature drops below 2 million degrees Celsius (3.5 million degrees Fahrenheit) in the convective zone, where large bubbles of hot plasma (a soup of ionized atoms) move upwards.

The sun's *surface* - the photosphere - is a 500-kilometer-thick (300-mile-thick) region, from which most of the sun's radiation escapes outward and is detected as the sunlight we observe here on Earth about eight minutes after it leaves the Sun. Sunspots in the photosphere are areas with strong magnetic fields that are cooler, and thus darker, than the surrounding region. Sunspot numbers fluctuate every 11 years as part of the sun's magnetic activity cycle. Also connected to this cycle are bright solar flares and huge coronal mass ejections that blast off the sun.

The temperature of the photosphere is about 5,500 degrees Celsius (10,000 degrees Fahrenheit). Above the photosphere lie the tenuous chromosphere and the corona (*crown*). Visible light from these top regions is usually too weak to be seen against the brighter photosphere, but during total solar eclipses, when the Moon covers the photosphere, the chromosphere can be seen as a red rim around the sun while the corona forms a beautiful white crown with plasma streaming outward, forming the *points* of the crown.

Above the photosphere, temperature increases with altitude, reaching as high as 2 million degrees Celsius (3.5 million degrees Fahrenheit). The source of coronal heating has been a scientific mystery for more than 50 years. Likely solutions emerged from observations by the Solar and Heliospheric Observatory (SOHO) and the Transition Region and Coronal Explorer (TRACE) missions, but the complete answer still evades scientists. Recent missions - Hinode, Solar Terrestrial Relations Observatory (STEREO), and the Solar Dynamics Observatory (SDO) - greatly improved our knowledge of the corona, getting us still closer to the answer. They also give us an unprecedented understanding of the physics of space weather phenomena such as solar flares, coronal mass ejections, and solar energetic particles. Space weather can adversely affect our technology in space and on Earth; these missions help us to develop space weather reports.

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How the Sun Got its Name

The sun has many names in many cultures, all of them presumably pre-historic in their origins. The ancient Greeks called it Helios and the ancient Romans called it Sol, both of which derive from the same Proto-Indo-European term. Latin Sol developed as sole in Italian, sol in Portuguese and Spanish, and with the addition of an originally diminutive suffix, as soleil in French. Modern English sun evolved from the same Proto-Germanic form that today is Sonne in German and zon in Dutch, variously attested as sonne and sunne in Old and Middle English, with similar forms found in other ancient Germanic languages such as Old Norse, Old Saxon, Old High German and Gothic.

Significant Dates

- **150 BCE:** Greek scholar Claudius Ptolemy writes the *Almagest*, formalizing the Earth-centered model of the solar system. The model was accepted until the 16th century.
- **1543:** Nicolaus Copernicus publishes, *On the Revolutions of the Celestial Spheres* describing his heliocentric (sun-centered) model of the solar system.
- **1610:** First observations of sunspots through a telescope made independently by Galileo Galilei and Thomas Harriot.
- **1645 to 1715:** Sunspot activity declines to almost zero, possibly causing a *Little Ice Age* on Earth
- **1860:** Eclipse observers see a massive burst of material from the sun; it is the first recorded coronal mass ejections
- **1994:** The Ulysses spacecraft makes the first observations of the sun's polar regions.
- **2004:** NASA's Genesis spacecraft returns samples of the solar wind to Earth for study.
- **2006:** Ulysses begins its third set of data-gathering passes over the north and south poles of the sun.
- **2007:** NASA's double-spacecraft Solar Terrestrial Relations Observatory (STEREO) mission returns the first three-dimensional images of the sun.
- **2009:** After more than 18 years, the Ulysses mission ends. Ulysses was the first and only spacecraft to study the sun at high solar latitudes.
- **2010:** SDO is launched and begins observing the sun in super-high definition.
- **2011:** The STEREO spacecraft, from their dual perspective, see the entire sun for the first time.