Coherence and Alignment Among Science Curriculum, Instruction, and Assessment (CASCIA) Project

Grade 8 Unit 2: Gravity and Motion of Objects in the Solar System

Task 3 Prompt 3 Part A Scored and Annotated Anchor Set

March 2025

Grade 8 Unit 2: Gravity and Motion of Objects in the Solar System, Task 3 Prompt 3 Part A Scored and Annotated Anchor Set was developed with funding from the U.S. Department of Education under the Competitive Grants for State Assessments Program CFDA 84.368A. The contents of this paper do not represent the policy of the U.S. Department of Education, and no assumption of endorsement by the Federal government should be made.

CASCIA Grade 8 EOU Assessment 2 Task 3: Earth's Solar System
Prompt 3 Part A Score Point 3

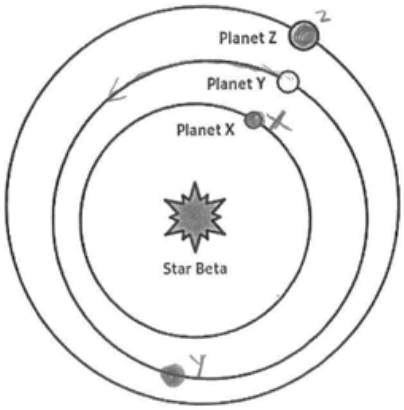
Prompt 3 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 3 Part A.	No aspect of the response is correct	Response includes **one (1)** of the **three (3)** aspects	Response includes **two (2)** of the **three (3)** aspects	Response includes the following aspects: • Circles "YES" • Provides orbital periods or describes the situation in which the described orbital conditions occur • Accurate representation on the diagram of the location of the planets at the specified time point	NA

Score Point 3 (3/3 aspects met)

- Part A
  - Circles "YES."
  - Provides orbital periods or describes the situation in which the described orbital conditions occur.
  - Accurately represents the planets' locations on the diagram at the specified time point.

Diagram 1. Star Beta's System



Part A.

Is it ever possible for **Planet Z** to be closer to **Planet X** than to **Planet Y**? Circle **YES** or **NO**.

(YES) NO

Explain your answer by considering the planets' orbital periods **AND** by drawing the relative orbital positions of the planets on **Diagram 1.**

I divides them with Z. After that you could find there positions. I noticed Z was closer to X after that, than Y was to X. So planet Z can be closer to X than Y.

CASCIA Grade 8 EOU Assessment 2 Task 3: Earth's Solar System
Prompt 3 Part A Score Point 2

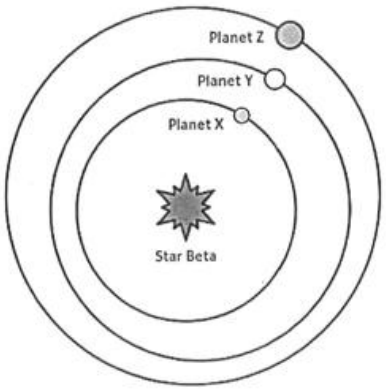
Prompt 3 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 3 Part A.	No aspect of the response is correct	Response includes **one (1)** of the **three (3)** aspects	Response includes **two (2)** of the **three (3)** aspects	Response includes the following aspects: • Circles "YES" • Provides orbital periods or describes the situation in which the described orbital conditions occur • Accurate representation on the diagram of the location of the planets at the specified time point	NA

Score Point 2 (2/3 aspects met)

- Part A
  - Circles "YES."
  - Provides orbital periods or describes the situation in which the described orbital conditions occur.
  - Does **NOT** accurately represent the planets' locations on the diagram at the specified time point.

Diagram 1. Star Beta's System



Part A.

Is it ever possible for **Planet Z** to be closer to **Planet X** than to **Planet Y**? Circle **YES** or **NO**.

YES NO

Explain your answer by considering the planets' orbital periods **AND** by drawing the relative orbital positions of the planets on **Diagram 1**.

Planet Y can be on the opposite side of the sun and planets Z and X can be on the same side and would make them closer.

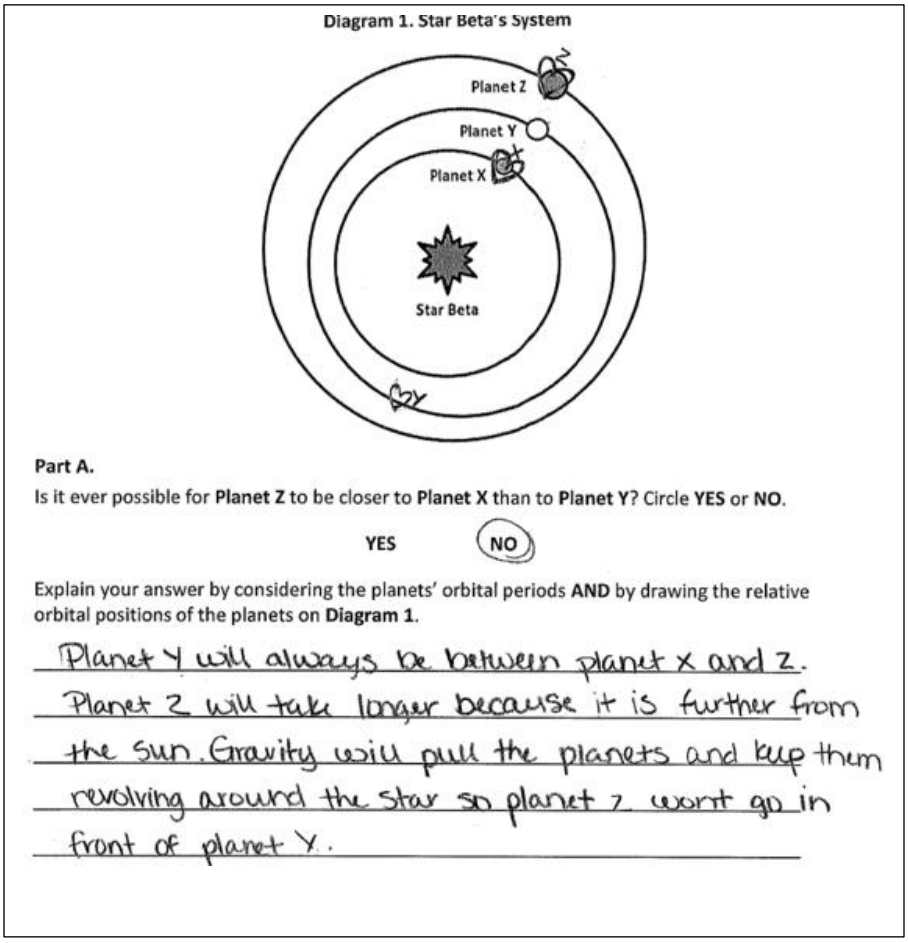
CASCIA Grade 8 EOU Assessment 2 Task 3: Earth's Solar System
Prompt 3 Part A Score Point 1

Prompt 3 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 3 Part A.	No aspect of the response is correct	Response includes **one (1)** of the **three (3)** aspects	Response includes **two (2)** of the **three (3)** aspects	Response includes the following aspects: • Circles "YES" • Provides orbital periods or describes the situation in which the described orbital conditions occur • Accurate representation on the diagram of the location of the planets at the specified time point	NA

Score Point 1 (1/3 aspects met)

- Part A
  - Does **NOT** circle "YES."
  - Does **NOT** provide orbital periods or describe the situation in which the described orbital conditions occur.
  - Accurately represents the planets' locations on the diagram at the specified time point.



CASCIA Grade 8 EOU Assessment 2 Task 3: Earth's Solar System
Prompt 3 Part A Score Point 0

Prompt 3 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 3 Part A.	No aspect of the response is correct	Response includes **one (1)** of the **three (3)** aspects	Response includes **two (2)** of the **three (3)** aspects	Response includes the following aspects: • Circles "YES" • Provides orbital periods or describes the situation in which the described orbital conditions occur • Accurate representation on the diagram of the location of the planets at the specified time point	NA

Score Point 0 (0/3 aspects met)

- Part A
  - Does **NOT** circle "YES."
  - Does **NOT** provide orbital periods or describe the situation in which the described orbital conditions occur.
  - Does **NOT** accurately represent the planets' locations on the diagram at the specified time point.

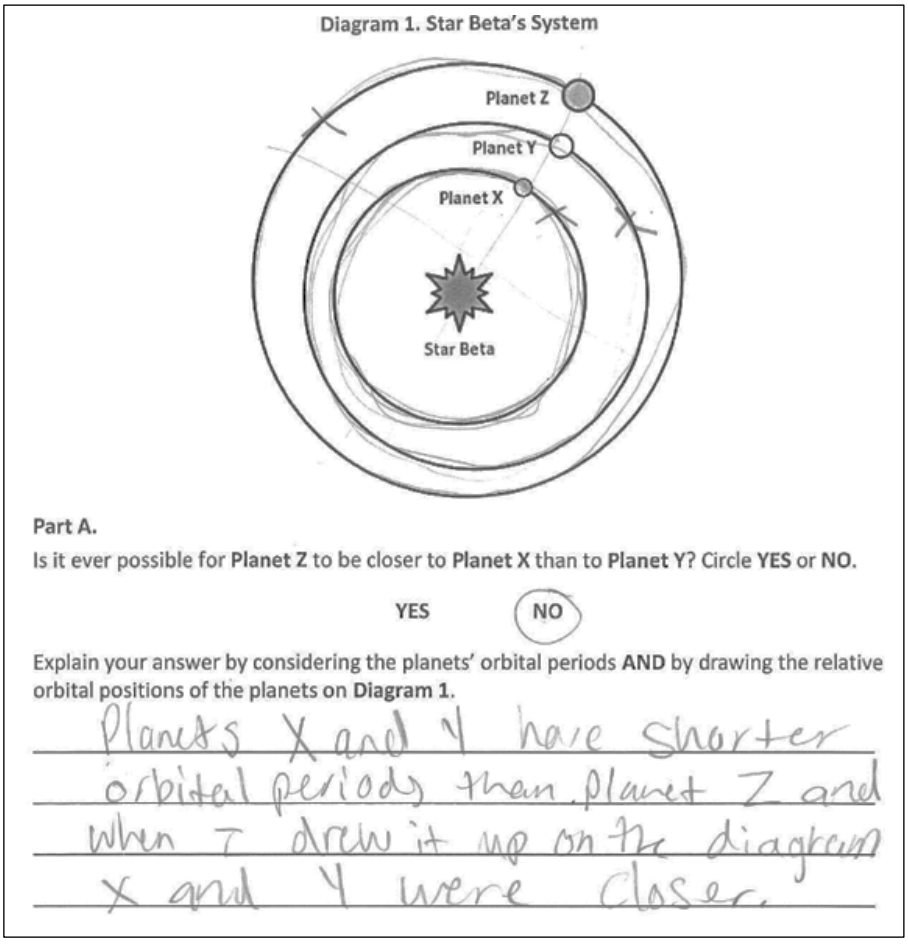


Diagram 1. Star Beta's System

Part A.

Is it ever possible for **Planet Z** to be closer to **Planet X** than to **Planet Y**? Circle **YES** or **NO.**

YES (NO)

Explain your answer by considering the planets' orbital periods **AND** by drawing the relative orbital positions of the planets on **Diagram 1.**

Planets X and Y have shorter orbital periods than Planet Z and when I drew it up on the diagram X and Y were closer.