

2023–2024 Gr6 Science Benchmark Unit 2

Answer Key

Question 1. D – 1 Point

Standards

MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Question 2. A – 1 Point

Standards

MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Question 3. A – 1 Point | B – 0 Point | C – 1 Point | D – 0 Point

Standards

MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Question 4. O – 4 Points

Standards

MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Question 5. C – 1 Point

Standards

MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Question 6. D – 1 Point

Standards

MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Question 7. C – 1 Point

Standards

MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

Question 8. A – 1 Point

Standards

MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

Question 9. A – 1 Point

Standards

MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

Question 10. A – 1 Point

Standards

MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

Question 11. A – 1 Point | B – 0 Point | C – 1 Point | D – 0 Point | E – 1 Point | F – 1 Point | G – 0 Point

Standards

MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

Question 12. C – 1 Point

Standards

MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

Question 13. D – 1 Point

Standards

MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

Question 14. B – 1 Point

Standards

MS-PS2-3

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

Question 15. B – 1 Point

Standards

MS-PS2-3

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

Question 16. A – 1 Point

Standards

MS-PS3-5

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Question 17. B – 1 Point

Standards

MS-PS3-5

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Question 18. O – 3 Points

Standards

MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

Question 19. B – 1 Point

Standards

MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

Question 20.

Response 1: B – 1 Point

Response 2: A – 1 Point

Response 3: B – 1 Point

Response 4: A – 1 Point

Standards

MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Question 21. A – 1 Point

Standards

MS-LS1-7

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

Question 22. D – 1 Point

Standards

MS-LS1-7

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.