حل مراجعة نهائية وفق الهيكل الوزاري الجديد منهج انسباير

المزيد من الملفات بحسب الصف الثامن والمادة علوم في الفصل الأول	
1	كراسة تدريبية مراجعة وفق الهيكل الوزاري الجديد منهج بريدج
2	الأسئلة المتوقعة للاختبار النهائي حسب صفحات الكتاب
3	مراجعة نهائية وفق الهيكل الوزاري الجديد منهج بريدج مع الإجابات
4	حل تجميعة أسئلة الكتاب وفق الهيكل الوزاري الجديد منهج بريدج
5	ملخص الدرس الثاني line time a Building منهج انسباير

8G Science EOT 2025/2026

First Semester

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Question 1 a

3) To determine if an object has changed position, you need to know its position relative to another object. _____

- [x] True
- [ ] False

Question 1 b

COLLECT EVIDENCE

How can you describe the position of the train from the beginning of the lesson? Record your evidence (A) in the chart at the beginning of the lesson.

To describe position three things are needed:

- Reference point

-A direction from the reference point

- Distance

Question 2 a

Imagine you are giving directions to a friend. How would you use a reference point to help them find your location?

"You can find me **10 m** to the **right** of **"Geekay" store.**
Reference point: **Geekay store**
Direction: **right**
Distance: **10 meter**

Question 2 b

1) In order to determine an object's location, you need a _____.

- **A)** time
- [x] **B)** reference point
- **C)** speed
- **D)** displacement

Question 3 a
A cyclist travels 60 kilometers in 2 hours. How would you calculate their average speed, and what does it tell you about their motion?

Need: S

How: $\text{speed} = \frac{distance\ (d)}{time\ (t)}$

Calculate $\text{speed} = \frac{60\ \text{km}}{2\ \text{h}} = 30\ \text{km/h}$

This tells us that, on average, the cyclist covers **30 kilometers every hour**.

Question 3 b
1. A truck driver makes a trip that covers 2,380 km in 28 hours. What is the driver's average speed in km/h?

Need: S

How: $\text{speed} = \frac{distance\ (d)}{time\ (t)}$

Calculate $\text{speed} = \frac{2380\ \text{km}}{28\ \text{h}} = 85\ \text{km/h}$

Question 4 a
A motorcycle has a mass of 500 kg, and a force of 1500 N is applied to it. What is its acceleration?

Need: acceleration (a)

How: $\text{acceleration (a)} = \frac{force}{mass}$

Calculate $\text{acceleration (a)} = \frac{1500\ N}{500\ kg} = 3.0\ \text{m/s}^2$

Question 4 b
What is the acceleration when a force of 2.0 N is applied to a ball that has a mass of 0.60 kg?

Need: acceleration (a)

How: $\text{acceleration (a)} = \frac{force}{mass}$

Calculate $\text{acceleration (a)} = \frac{2.0\ N}{0.60\ kg} = 3.33\ \text{m/s}^2$

Question 5 a
How does friction affect motion?

Friction **opposes motion**

Friction **slows** objects down

Question 5 b

LAB Sticky Situation

Analyze and Conclude

6. Compare the forces required to pull the block across the two surfaces.

It was **easier** to pull the block on the smooth surface and **harder** on the rough surface because the rough surface has **more friction**.

7. How did changing the surface affect the motion of the block?

Smoother surface = less friction= more movement
Rougher surface = more friction= less movement

8. Which surface created a larger opposing force? Explain.

A rough surface has **more friction** because the tiny bumps on the surface push against the bumps on the block.

Question 6 a

THREE-DIMENSIONAL THINKING

In what ways does Newton's second law of motion describe **stability and change** of any **system** that has forces acting on it?

Newton's Second Law of Motion states that:

$$F = m \times a$$

How it describes stability and change:

- **Stability (no acceleration)**
  when a = 0 , f=0 → no net force
- **Change: (acceleration)**
  when a is not = zero → there is net force

.

Question 6 b

COLLECT EVIDENCE

How do multiple forces help explain what happens when you push or pull a water tube? Record your evidence (C) in the chart at the beginning of the lesson.

When multiple forces act on an object, the forces will add together and act as a NET force in one direction.

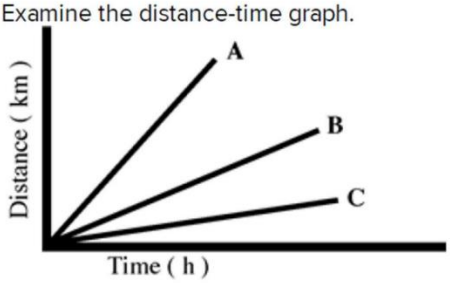
Question 7 a

You are analyzing a distance-time graph. What features would indicate that an object is moving at a constant speed?

constant speed if the graph shows a **straight line going up**

Question 7 b

9) Examine the distance-time graph.



a. Which line represents travel at the fastest speed? Justify your answer.

fastest speed is **Line A → highest slope**

Question 8 a

If two objects of different masses are dropped from the same height in a vacuum, which one will hit the ground first? Explain why.

Both will hit the ground in the same time

Explanation:

- Both are affected by the same force giving the same acceleration 9.8 m/s2
- No air resistance

Question 8 b

LAB Weighing Washers

8. **MATH Connection** Did you see a pattern in the ratios between mass and weight? Explain what you think this pattern means.

The ratio (division) between mass and weight is always the same and around 10 m/s2

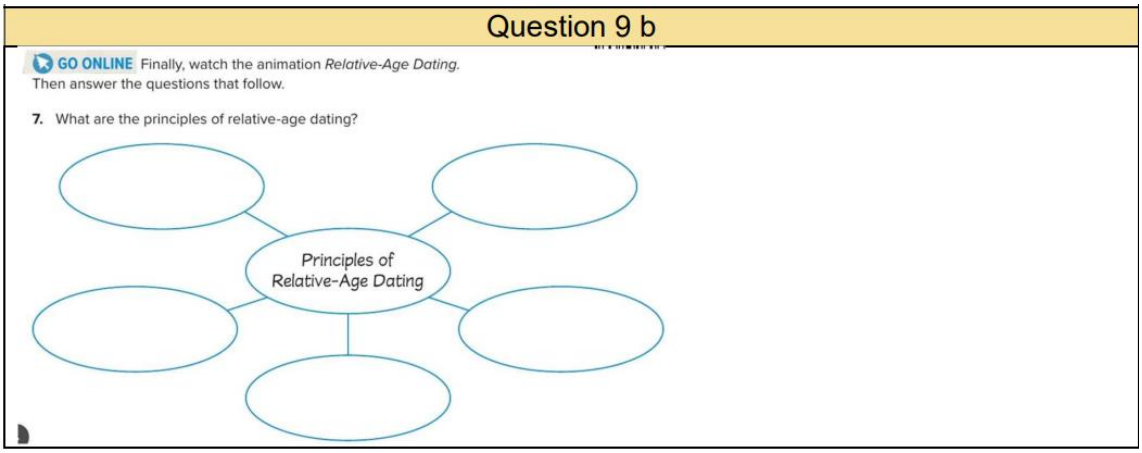
Question 9 a

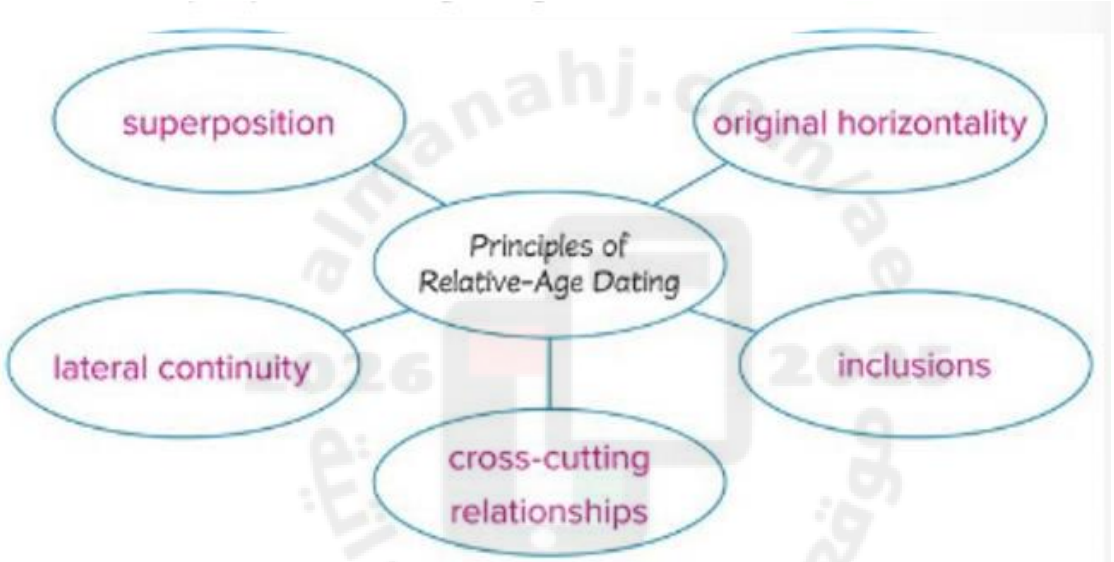
When studying rock layers in a canyon, how can you tell which layers are the oldest? Explain using geological principles.

The **oldest layers are at the bottom**, and the **youngest are at the top**.

This is called the **Principle of Superposition.**

Question 9 b





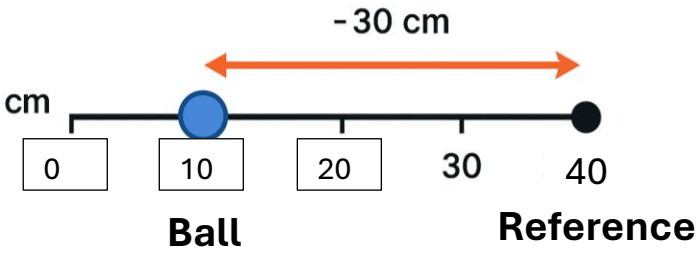
Question 10 a

If a ball is placed at the 10 cm mark and your reference point is at the 40 cm mark, how would you describe the ball's position relative to the reference point?

The ball is **30 cm to the left** of the reference point.

Here's why:

- Reference point: **40 cm**
- distance: **30 cm**
- Direction: left (-)



Question 10 b

INVESTIGATION

Start from Here

1. Put a sticky note at the 50-cm mark of a meterstick. This is your reference point.
2. Place a small object at the 40-cm mark. It is 10 cm in the negative direction from the reference point.

EXPLORE/EXPLAIN Lesson 1 Position and Motion 11

3. Continue moving the object and recording its distance, its reference direction, and its position to complete the table below.

Position of Object		
Distance (cm)	Reference Direction	Position (cm)
10 cm	negative	40 cm
40 cm	positive	
15 cm	positive	
	positive	75 cm
		30 cm

4. How would the data in the table change if the positions were the same, but the reference point was at the 40-cm mark? Complete the table below with the new information.

Position of Object		
Distance (cm)	Reference Direction	Position (cm)

Question 10 b

INVESTIGATION

Start from Here

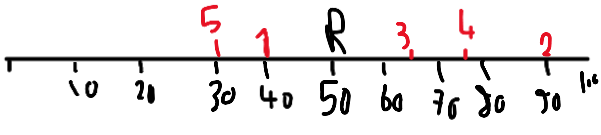
1. Put a sticky note at the 50-cm mark of a meterstick. This is your reference point.
2. Place a small object at the 40-cm mark. It is 10 cm in the negative direction from the reference point.

EXPLORE/EXPLAIN Lesson

3. Continue moving the object and recording its distance, its reference direction, and its position to complete the table below.

Ref = 50 cm

Position of Object		
Distance (cm)	Reference Direction	Position (cm)
10 cm	negative	40 cm
40 cm	positive	50+40=90
15 cm	positive	50+15=65
25	positive	50+25 75 cm
20	−	50-20 30 cm

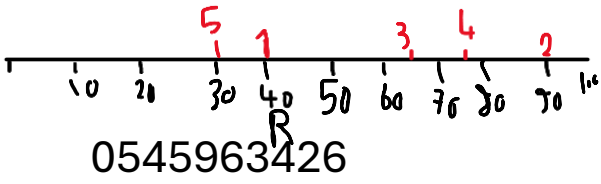


4. How would the data in the table change if the positions were the same, but the reference point was at the 40-cm mark? Complete the table below with the new information.

Ref=40

Position of Object		
Distance (cm)	Reference Direction	Position (cm)
0	—	40
50	+	90
25	+	65
35	+	75
10	−	30

same Position



Question 11 a
How can you determine whether an object is moving at a constant speed, and what evidence would support your conclusion?

Object moves same distance in each equal time interval.
(for example, 5 meters every second).

On a distance-time graph, the line is **straight going up.**

Question 11 b
Give two examples from everyday life where an object moves at a constant speed.

A car with a speed stabilizer
A man moving 1 step every second

Question 12 a
Geologists often compare rock layers from different locations. What is this process called, and how does it help in understanding Earth's history?

It is called **correlation**.
It helps match rock layers from different places to learn the order of events in Earth's history.

Question 12 b
COLLECT EVIDENCE How do geologists fill gaps in the rock record? Record your evidence (A) in the chart at the beginning of the lesson.

They compare rock layers, fossils(correlation) and index fossils from different places to fill in the missing history.

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Question 13 a
A sedimentary rock layer is found resting on top of eroded metamorphic rock. What type of unconformity does this represent, and what does it tell us about geological history?

Nonconformity: sedimentary and another type

It shows a **gap in geological history.**

Question 13 b

INVESTIGATION

Gaps in the Rock Record

1. Analyze the three photos below. Notice how the arrows point to a line between different rocks. How would you describe the rock below the arrows versus the rock above? Write your descriptions next to each image.

A 

B 

C 

INVESTIGATION

Gaps in the Rock Record

1. Analyze the three photos below. Notice how the arrows point to a line between different rocks. How would you describe the rock below the arrows versus the rock above? Write your descriptions next to each image.

A 

horizontal sedimentary layer overlies horizontal sedimentary layer

disconformity

B 

horizontal sedimentary layer overlies tilted sedimentary layer

Angular conformity

C 

horizontal sedimentary layer overlies nonsedimentary layer

Nonconformity

Question 14 a
How can fossils found in sedimentary rocks help scientists learn about the environment in which the organisms once lived?

How Fossils look like tell us how the place they lived in was like. The weather, the soil, the air, their predators.

Question 14 b
7. The Earth events on your model are based mostly on fossil evidence. How are fossils useful in understanding Earth's history? How are they useful in the development of the geologic time scale?

Fossils are used to give relative age of rock and arrange rock layers correctly

Question 15 a
A 10 kg object is resting on a flat surface. How would you calculate its weight?

Need: Weight

How: $\text{Weight} = mass \times g$

Calculate: $\text{Weight} = 10kg \times 9.8\, m/s^2 = \mathbf{98N}$

MATH Connection For each of the systems below, calculate the weight of the object. Then, apply scientific understanding to draw a free-body diagram of the system.

A. A book with a mass of 2 kg is at rest on top of a desk.

Need: Weight

How: $\text{Weight} = mass \times g$

Calculate: $\text{Weight} = 2kg \times 9.8\, m/s^2 = \mathbf{19.6N}$

Challenge:

Question 16 a
10) A driver needs to make a delivery to an office that is 30 km away. The driver has traveled for 45 minutes west down a straight road at 50 km/h. a. Has the driver traveled far enough to reach the office? Support your response.

$$\text{Distance} = speed \times time$$

Convert the time to hours:

$$\text{time in hours} = time\ in\ minutes \div 60$$

$$\text{time in hours} = 45\ minutes \div 60\ = 0.75\ h$$

$$\text{Distance} = 50\ \times 0.75\ = \mathbf{37.5\ km}$$

Yes, because driver has traveled **37.5 km**, which is greater than the **30 km** distance to the office.

Question 16 b
3. How long would it take a bus traveling at 52 km/h to travel 130 km?

Need: Time

How: $$\text{time} = \frac{distance}{speed}$$

Calculate: $$\text{time} = \frac{130\ km}{52\ km/h} = \mathbf{2.5\ h}$$

Written part

Q21

1. **How can you calculate the total distance an object travels along a path?**
- Total distance = add up all parts of the path taken.

2. **What does displacement tell us about an object's movement compared to distance?**
- Displacement = distance and direction
- Distance: length of path taken
3. **How can motion be described from different observers' points of view?**
- Reference point must be fixed. If it is not fixed then motion is relative
4. **What happens to an object's displacement if it returns to its starting point?**
- If an object returns to its start, displacement = **0**.
5. **How does changing the reference point affect how we describe an object's position?**
- Changing the reference point changes the numbers you use to describe position
6. **Why is position considered relative in physics?**
- Position is *relative* because it depends on the chosen reference point.

7. How can average speed be calculated from distance and time?

- **Average speed = total distance ÷ total time.**
8. **What is the average speed of a soccer ball that travels 34 m in 2.0 s?** Need: S

How: $\text{speed} = \frac{distance}{time}$

Calculate: $\text{speed} = \frac{34\ m}{2.0\ s} = \mathbf{17\ m/s}$

Q22

1. **What forces can cause a moving object to slow down and stop?**
   friction, air resistance,
2. **How does friction affect the motion of objects on different surfaces?**
   Smoother surface = less friction= more movement
   Rougher surface = more friction= less movement

3. **How do you determine the net force acting on an object when multiple forces are involved?**
   - Forces in positive direction – Forces in negative direction

4. **How does Newton's First Law explain the motion of an object when no force is applied?**
   - No net force → zero acceleration → no change in motion
     - if object moving → will stay moving with the same speed
     - if object at rest → will stay at rest

5. **How can a free body diagram help us understand the forces acting on an object?**
   - Free-body diagram helps us see the forces acting on an object to predict (expect) how it will move
6. **Why does the amount of force needed to move an object change depending on the surface?**
   Smoother surface = less friction= less force needed
   Rougher surface = more friction= more force needed

7. **How can we compare the effects of friction on dry and lubricated surfaces?**
   - Dry surface = more friction
   - lubricated = less friction.

Q23

1. **How does the mass of an object affect the gravitational force it experiences?**
   - More mass → more gravitational force.
2. **How does the distance between two objects influence the gravitational pull between them?**
   Increasing distance → gravitational force decreases
3. **Why do larger celestial bodies exert stronger gravitational forces?**
   - Celestial bodies (earth , sun, planets) → high mass → high gravity
4. **How can we compare gravitational forces acting on different planets at equal distances?**
   - At the same distance, a more massive planet pulls harder.
5. **How do you calculate the weight of an object using its mass and gravitational acceleration?**
   - Weight = mass × g (on Earth g ≈ 9.8 m/s^2).
6. **Why is the gravitational force between small objects difficult to observe?**
   - Small mass → small gravity
7. **A pumpkin with a mass of 3 kg is at rest on top of a desk. Calculate its weight.**

Need: W

How: Weight $= mass \times g$

Calculate: Weight $= 3kg \times 9.8\, m/s^2 = 29.4N$

Q24

1. **How can the position of fossils in rock layers help determine their relative age?**
   - Fossils in lower layers are usually older than fossils in higher layers.
2. **What geological principles help scientists understand the sequence of rock formation?**
   - Principles:
     superposition
     original horizontality
     cross-cutting relationships
     inclusions
3. **How does the presence of faults affect the interpretation of rock layer ages?**
   - Faults are newer than rocks they cut
4. **What does the principle of original horizontality tell us about sedimentary layers?**
   - Original horizontality: sediments are laid down flat; tilted layers were moved later.
5. **How can inclusions in rocks help determine which layer is older?**
   - Inclusions: fragments inside a rock are older than the rock that contains them.
6. **What does the discovery of marine fossils in mountain rocks tell us about Earth's past environments?**
   - Marine fossils on mountains mean the rocks were once under the sea
7. **What scientific idea explains that natural processes observed today also occurred in the past?**
8. Uniformitarianism
9. **How does fossil evidence support the idea that Earth's surface changes over time?**
   - Fossils are different so this means that earth changes over time