

SUBJECT: SCIENCE

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Unit 5. Materials and cycles on Earth (p.152-189)

- ✓ 5.1. The structure of the atom
- ✓ 5.2. Purity
- ✓ 5.3. Weather and climate
- ✓ 5.4. Climate and ice ages
- ✓ 5.5. Atmosphere and climate

Unit 6. Light (p.190-232)

- ✓ 6.1. Reflection
- ✓ 6.2. Refraction
- ✓ 6.3. Making rainbows
- ✓ 6.4. Galaxies
- ✓ 6.5. Rocks in Space

Unit 7. Diet and growth (p.233-251)

- ✓ 7.1. Nutrients
- ✓ 7.2. A balanced diet
- ✓ 7.3. Growth, development and health

Instructions:

- 1) Students **MUST** complete the study guide before revision classes.
- 2) Students are **ALLOWED** to use calculators for problem-solving tasks.

PART 1. SCIENTIFIC TERMS

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
1	atom	5		
2	electrostatic attraction	5		
3	purity	5		
4	incident ray	6.1		
5	normal	6.1		
6	angle of incidence	6.1		
7	angle of reflection	6.1		
8	medium	6.2		
9	angle of refraction	6.2		
10	dispersion	6.3		
11	prism	6.3		
12	absorb	6.4		
13	subtraction	6.4		
14	coloured filters	6.4		
15	non-luminous	6.4		
16	galaxy	6.5		
17	stellar dust	6.5		
18	asteroids	6.6		

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
19	asteroid belt	6.6		
20	craters	6.6		
21	anaemia	7.1		
22	starch	7.1		
23	constipation	7.2		
24	fibre	7.2		
25	embryo	7.3		

PART 2. EXERCISES

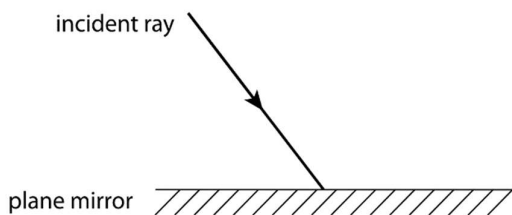
Exercise 1. Draw ray diagrams for reflection and refraction.

For each diagram, label

- the normal
- the angle of incidence (i)
- the angle of reflection (r)
- the reflected ray/ the refracted ray.

Note: For the refraction diagrams, you **DO NOT** need to measure the angles.

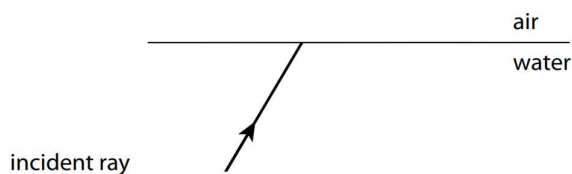
1.



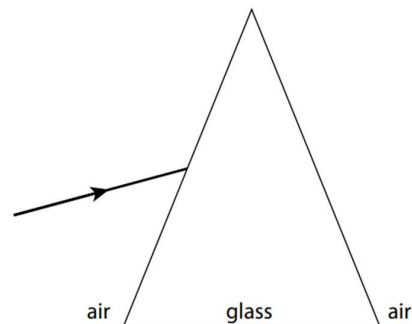
2.



3.



4.



Exercise 2. Complete the table below.

Nutrient	Examples of foods that contain a lot of this nutrient	Why the body needs this nutrient
Protein		
Carbohydrate		
Fat		
Vitamin A		
Vitamin C		
Vitamin D		
Calcium		
Iron		

Exercise 3. Solve the following problems and show your calculation steps clearly. Give your answers correct to one decimal place.

Formulae:

1) If a silver object is marked (n), the percentage of silver that it contains is calculated using the formula $\frac{n}{1000} \times 100\%$

2) A pure gold object is 24 carats. So, if a gold object is marked (n) carat, its purity percentage is calculated using the formula $\frac{n}{24} \times 100\%$

3) If an object moves at a constant speed (v) for a duration of time (t), the distance (d) it travels is calculated using the formula $d = v.t$

1. Calculate the percentage of silver in a bracelet marked 925.

2. Calculate the percentage of gold in 14 carat gold.

3. A jewellery store claims that a necklace is made of 24-carat gold, but it is found to contain 4 parts of silver. Calculate the actual purity percentage of the gold in the necklace.

4. The diameter of the asteroid Vesta is $\frac{1}{10}$ of the diameter of the planet Mercury. Mercury has a diameter of 5,000km. Calculate the diameter of Vesta.

5. Jupiter is three times the size of its moon, Ganymede. Jupiter has a diameter of 139,822 km. Calculate the diameter of Ganymede.

6. The average distance between Earth and Mars is about 225 million kilometres. How many minutes would it take for you to travel from Earth to Mars at the speed of light (300,000 km/s)?
