C4

Predicting Future Technology

CHAPTER ASSIGNMENT · 12 MARKS

Name _____ Class _____ No. _____ Date _____

Answer every question in the space given. Show your working. You may use the chapter page to help you.

Review, Think and activity questions from *Basic Science and Technology Textbook: Technology (Design and Technology), Mathayom 2* (หนังสือเรียนรายวิชาพื้นฐานวิทยาศาสตร์และเทคโนโลยี เทคโนโลยี (การออกแบบและเทคโนโลยี) ชั้นมัธยมศึกษาปีที่ ๒), Institute for the Promotion of Teaching Science and Technology (IPST, สสวท.), translated into English, for classroom use. The book has no exercise list, so the Check yourself and Chapter quiz questions are Guru Jazzy's own.

Review before the lesson (ทบทวนความรู้ก่อนเรียน)

R1 What is technology? Give one example that is an object and one that is a method.

R2 Why does technology keep changing?

Think about it (ชวนคิด)

T1 With more knowledge and technology, what would you create or develop to manage waste with the least harm to life, society and the environment?

T2 Predict what wastewater treatment in your school or community could be like in the future, so it works better and does less harm.

T3 A palm-oil factory in an industrial estate has little space. Its wastewater has a lot of oil and grease floating on it. Which treatment method suits it? Why?

T4 What might air-pollution control technology look like in the future?

Activities from the chapter

4.1 **Choose a technology.** A village wants to farm to earn money for the community, but its soil lacks organic matter and nutrients, so plants grow badly and the harvest is smaller than hoped. Choose a technology to fix the soil.

Technology	Impact on life	Impact on society	Impact on the environment

(a) The technology we chose, and why:

End-of-chapter activity (กิจกรรมท้ายบท)

Activity **Predict future technology.** Think about the product or method you made in Chapters 1–3. As knowledge grows and people, society, the economy and the environment change, predict how your technology will change.

Factor	Change that has happened	Source of data	Prediction
Advances in science			
People and society			
Economy			
Environment			

Challenge activity (กิจกรรมท้าทายความคิด)

Challenge Choose one problem: floods in the rainy season, traffic jams in cities, blocked drains, crowded city communities, air pollution, toxic waste in the environment, or no water for farming in the hot season.

(a) The problem scope:

(b) Three approaches, the one you chose, and why:

(c) Draw your technology as a system: input → process → output, with feedback.

Check yourself

1. Give one advantage and one disadvantage of a sanitary landfill. [2]

2. Complete the aerobic composting equation: organic waste + microbes + _____ + _____ → fertiliser + CO_2 + water + heat. [2]

3. Put these air-pollution machines in order, from the one that catches the biggest dust to the one that catches the smallest: bag filter, cyclone, electrostatic precipitator, gravity settling chamber. [2]

4. Which wastewater method would you use for factory water containing heavy metals? Explain how it works. [2]

5. Name the four factors the book uses to predict future technology. [4]

Chapter quiz

Q1 About how long can a plastic bottle or bag take to break down?

A. 4 weeks B. 4 years C. 45 years D. 450 years

Q2 Which waste method is cheap and easy but spreads disease and smells?

A. Open dumping B. Sanitary landfill C. Waste-to-energy incinerator D. Composting

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Q3 In a sanitary landfill, what are the plastic sheets for?

A	B	C	D
To make it look nice	To stop leachate soaking into soil and water	To burn the rubbish	To make compost

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Q4 Aerobic composting needs microbes plus...

A. Oxygen and water B. Petrol C. Plastic D. Darkness only

Q5 Which wastewater method adds alum so tiny particles clump and sink?

A. Constructed wetland B. Aerated lagoon C. Coagulation D. Ion exchange

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Q6 Which method removes heavy metals from factory wastewater?

A. Ion exchange with resin B. Gravity settling C. Composting D. Open dumping

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Q7 Which air-pollution machine catches dust smaller than 1 micron with more than 99% efficiency?

A	B	C	D
Gravity settling chamber	Cyclone	Bag filter	Electrostatic precipitator

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Q8 The book predicts technology from four kinds of factor. Which is NOT one of them?

A	B	C	D
Advances in science	People and society	Economy	Your favourite colour

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End of assignment · Check your answers against the chapter at gurujazzy.com/subjects/it/sem-1/chapter-4-predicting-future-technology/