C1

Let's Solve the Problem

CHAPTER ASSIGNMENT · 10 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 Community K dumps its rubbish into the canal, and the canal now smells, attracts animals and spreads disease. Using the engineering design process you learned in M.1, write the first step you would take to solve this.

R2 What environmental problems are there around you, and what causes them? Give one caused by people and one caused by nature.

Think about it (ชวนคิด)

T1 Apart from the microbot, the cyclone separator and the landfill that makes electricity, what other technology for managing the environment do you know?

T2 If you were Non, who wants a way to crush the rubbish in the bin, what topics would you gather data on? Give at least three.

T3 You want to search for the cause of global warming. Which keywords would you use? Compare with your group: who found relevant results fastest?

T4 Apart from Non's and Namwan's ideas, what other ways could fix the overflowing bin?

Activities from the chapter

1.1 **Survey the environment in your school.** In your group, survey the environmental problems in your school or community. Draw a mind map with as many problems as you can find.

1.2 **Define the problem scope.** Choose one problem from Activity 1.1 and say why you chose it.

(a) Analyse it with 5W1H.

Question	Answer
What (what problem happened?)	
Who (who is affected, who causes it?)	
Why (why does it happen?)	
When	
Where	
How (how could it be solved?)	

(b) Write the problem scope in one or two sentences.

1.3 **Choose topics to gather data on.** Write at least three topics linked to your solution, and a source for each.

#	Topic	Source
1		
2		
3		

1.4 **Gather data.** From your topics in Activity 1.3, gather data and summarise the approaches you found.

#	Approach found	Source	Date searched
1			
2			
Other			

End-of-chapter activity (กิจกรรมท้ายบท)

Activity Present your analysis and data from Activities 1.1–1.4 to the class. Write down the questions and suggestions other groups gave you.

Check yourself

1 A lever compressor is pushed with F1 = 20 N, 100 cm from the pivot. The pressing plate is 25 cm from the pivot. Use F1 × L1 = F2 × L2 to find F2. Show your working. [2]



รูป 1.16 อุปกรณ์บีบอัดขยะ

รูป 1.17 หลักการโมเมนต์ของแรง

2 A hydraulic system has a small piston of area 2 cm² and a large piston of area 20 cm². You push the small piston with 30 N. What force does the large piston give? [2]

3 Give two things that make a source of data reliable. [2]

4 Match each bin colour to its rubbish: blue, yellow, green, red. [4]

Bin	Rubbish that goes in it
Blue	
Yellow	
Green	
Red	

Chapter quiz

Q1 Which of these environmental problems is caused by nature, not by people?

A	B	C	D
Factory wastewater in a river	Smoke from cars	An earthquake	Rubbish dumped in a canal

---

Q2 Which coloured bin is for recyclable rubbish such as glass, paper, plastic and metal?

A. Blue B. Yellow C. Green D. Red

Q3 A cyclone separator cleans dirty air by using...

A	B	C	D
Centrifugal force from spinning air	A magnetic field	Chemicals sprayed on the dust	Sunlight

---

Q4 In 5W1H, which question asks “how can we solve this problem?”

A. What B. Why C. Where D. How

Q5 Why should you open the cap before crushing a plastic bottle?

A	B	C	D
To make it lighter	So the air inside can escape and stop pushing back	To stop the bottle melting	So it fits in the green bin

---

Q6 You want to find ways to reduce rubbish. Which search keyword works best?

A. Rubbish B. Bins C. Ways to reduce rubbish D. School

Q7 Lever: you push 10 N at 100 cm from the pivot. The plate is 25 cm from it. What force presses the rubbish?

A. 2.5 N B. 10 N C. 25 N D. 40 N

Q8 Which is the most reliable source of data?

A	B	C	D
A post with no author or date	The website of the agency responsible for the topic	A rumour from a friend	An advert

---

End of assignment · Check your answers against the chapter at gurujazzy.com/subjects/it/sem-1/chapter-1-lets-solve-the-problem/