C1

Computational Thinking

CHAPTER ASSIGNMENT

Name _____ Class _____ No. _____ Date _____

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

Questions from *Basic Science and Technology Textbook: Technology (Computing Science), Mathayom 2* (หนังสือเรียนรายวิชาพื้นฐาน วิทยาศาสตร์และเทคโนโลยี เทคโนโลยี (วิทยาการคำนวณ) ชั้นมัธยมศึกษาปีที่ ๒), 4th printing 2023, Institute for the Promotion of Teaching Science and Technology (IPST, สสวท.), Ministry of Education, translated into English, for classroom use.

Review before the lesson (ทบทวนความรู้ก่อนเรียน)

R1 Put a tick ✓ in front of each correct statement.

(a) ☐ Abstraction (แนวคิดเชิงนามธรรม) is one of the components of computational thinking (แนวคิดเชิงคำนวณ).

(b) ☐ Abstraction is separating the necessary details from the details that are not necessary.

Try it (ลองทำดู) Explain the way from your home to school, so that a younger child can understand it and follow the same way later.

Think about it (ชวนคิด)

Part 1 "What is the total price of everything?" (ราคารวมสินค้าทั้งหมดกี่บาท) Part 1: Try to help break the calculation of the total price of all the items into sub-problems (ปัญหาย่อย).



Part 2 “What is the total price of everything?” Part 2: Look at the information needed for the following calculation, then draw a circle around the text that appears again in every item.

Quantity of soap	**×**	**Price of soap**
Quantity of shampoo	×	Price of shampoo
Quantity of books	×	Price of a book
Quantity of toothbrushes	×	Price of a toothbrush
Quantity of glasses	×	Price of a glass
Quantity of rulers	×	Price of a ruler
Quantity of scissors type 1	×	Price of scissors type 1
Quantity of scissors type 2	×	Price of scissors type 2

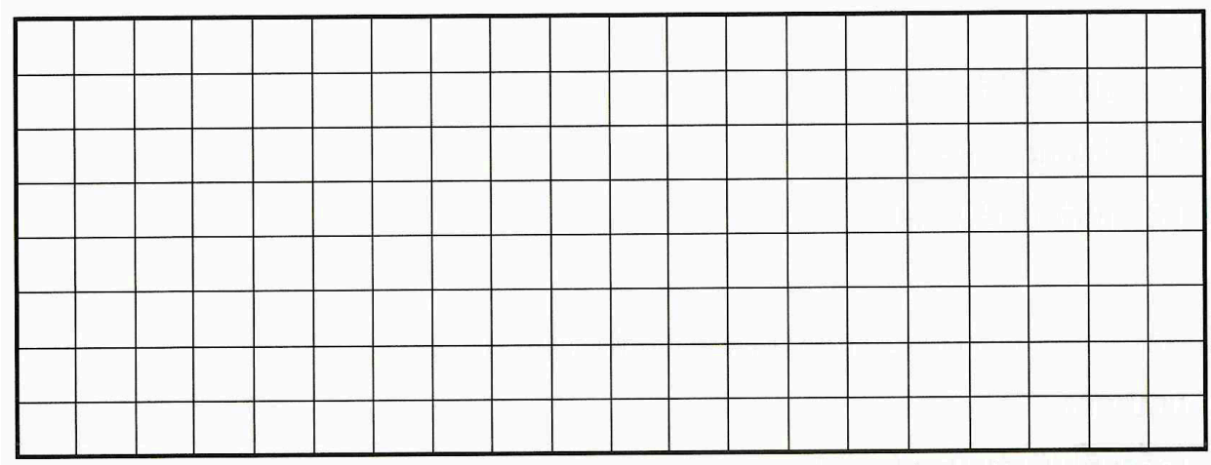
Part 3 “What is the total price of everything?” Part 3: Write down what is the same in Think about it “What is the total price of everything?” Part 2, then underline the parts that are not the same.

Part 4 “What is the total price of everything?” Part 4: What is the algorithm (**อัลกอริทึม**) for calculating the total price of all the items?

Activities from the chapter

1.1 Follow these instructions.

(1) Draw a village on the grid, where 1 grid square is 20 units and the bottom-left corner of the grid is the coordinate (0, 0). Do not let your friend see the original picture.



(2) Write an algorithm for drawing the picture in step 1, then give it to your friend to draw.

(3) Check the result your friend drew.

1.2 Write an algorithm for something you are interested in, then tell a friend to follow it, for example folding clothes, or choosing what to wear in different weather (hot, cold, rainy, etc.).

End-of-chapter activity (กิจกรรมท้ายบท)

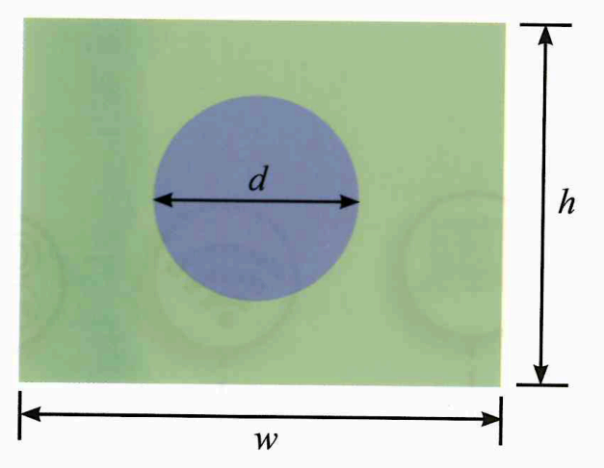
Activity The village is holding a New Year party, and you have been given the job of washing a lot of plates. Every plate is the same size. When they are washed, they must be stored in boxes that hold 3 stacks of 10 plates each. Write an algorithm for washing the plates and storing them in the boxes.

End-of-chapter exercises (แบบฝึกหัดท้ายบท)

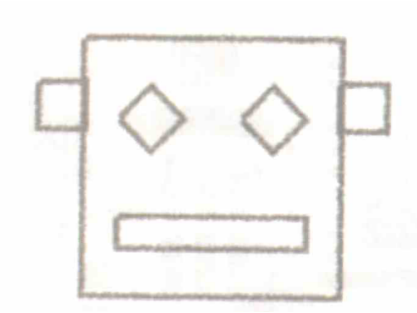
1. Communicate the lyrics of the following song, “If we’re feeling good” (หากพวกเรากำลังสบาย), more concisely.

   “If we’re feeling good, clap our hands. If we’re feeling good, clap our hands. If we’re happy, let go of every sorrow, why waste any time, clap our hands. If we’re feeling good, laugh out loud. If we’re feeling good, laugh out loud. If we’re happy, let go of every sorrow, why waste any time, laugh out loud. If we’re feeling good, stomp our feet. If we’re feeling good, stomp our feet. If we’re happy, let go of every sorrow, why waste any time, stomp our feet.”

2 Mr Mobai wants to lay grass in the back garden of his house, which is rectangular. In the middle he has dug a circular pond, to be made into a fish pond. The rest is to be covered with grass to look nice. One piece of grass turf is 30 × 30 centimetres. How many pieces of turf does Mr Mobai need to cover the whole lawn?



3 Design an algorithm to draw the following robot, both in a form a person can follow and in a form a computer can follow to draw it.



End of assignment · Check your answers against the chapter at gurujazzy.com/subjects/it/sem-2/chapter-1-computational-thinking/