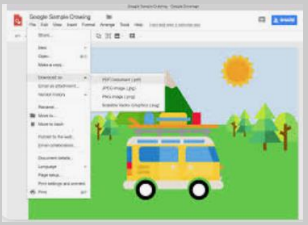
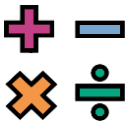
Watling PRIMARY SCHOOL
Nurturing a passion for learning

STEAM Challenges

Year 5 – Summer 1

Science 	In Science, we are learning about materials. 1) Start by choosing six objects; describe what material each object is made from and why that material is suitable. 2) Next, carry out a simple **absorbency test** by placing a spoonful of water on a plate and testing different household materials—such as tissue, foil, cotton wool or sponge—to see which ones absorb the water and which do not, then record what you notice. 3) After that, think about everyday changes that happen in your home and decide whether each one is **reversible or irreversible**, such as melting butter, toasting bread, or freezing water. If you want an extra challenge, with an adult's help you can try a simple kitchen science activity, such as **melting and cooling chocolate,** dissolving and evaporating salt water, or separating sand from water, and explain what changed and whether the change could be reversed. Take pictures and put them on Seesaw.
Technology 	This term we are exploring vector graphic design using laptops. Do some investigation into Google Drawings. Perhaps apply what you know about Cityscapes to create your own. Remember to screenshot and post it on Seesaw. 
Engineering 	This term we will be learning about Bletchley Park. Begin by researching what happened there and why engineers and codebreakers were so important; try to find out who Alan Turing was and how his work helped to break enemy codes. After this, explore how Morse code works by looking at examples of dots and dashes used to represent different letters.
Arts 	Building on from your Engineering homework, design your own version of Morse code: create a new system using symbols, colours, shapes, sounds, or even short movements to represent the alphabet. Once your code is complete, write a short message using your new symbols and ask someone at home to try to decode it. Finally, reflect on how engineers at Bletchley Park had to think logically, spot patterns, and create solutions—just like you did when inventing your code.
Maths 	Complete 3 reasoning Maths questions a week on the next pages. You can edit straight onto Seesaw or take a picture.

Children in Year 5 can bring any STEAM Challenge work they complete into school or submit it on Seesaw.

1 Write in what the **two missing** numbers could be.

10 278	<		<	10 287	<		<	10 782

2

2 Write the **five** numbers **in order**, from **largest** to **smallest**.

965 908	96 590	956 908	965 809	96 950
largest				**smallest**

2

3 Which of these are **correct**?
Put a **tick** (✓) or **cross** (✗) in the box next to each calculation.

a) **1672 + 120 = 1792** ☐

b) **2437 + 520 = 2939** ☐

c) **3957 – 2030 = 1627** ☐

d) **6781 – 340 = 6441** ☐

2

4 Peter has saved **£190**. His grandmother gives him **£50** for his birthday, and he then spends **£80** on some new computer games.
How **much** does he have **left**?

Show your method

2

5 George says that he **added 48** to **375** in his head.
Explain here how he might have done this and write the answer.

_____

_____

_____

_____ ☐

2

6 a) How many **more** than **176** is **220**? ☐

b) What number is **160 less** than **583**? ☐

2

7 **Match** the **value** of the **digit 7** in each of these numbers to the correct **place value**. The first one is done for you.

a) **27·06**	**tens**
b) **34·073**	**ones**
c) **0·789**	**hundreds**
d) **70·9**	**hundredths**
e) **726·3**	**tenths**

2

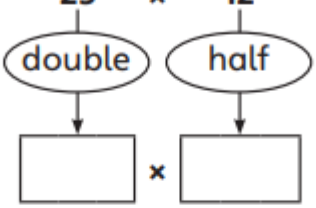
8 a) What is **added** to **45·673** to make **45·693**? ☐

b) What is **subtracted** from **7·86** to make **7·76**? ☐

2

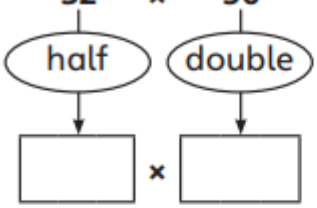
9 Show how to use **doubling** and **halving** to work out the answers.

a) **25** × **12**



25 × 12 = ☐

b) **32** × **50**



32 × 50 = ☐

2

10 Here is a bus timetable.

Destination	Departs (24 hour clock)	Departs (am/pm time)	Arrives (am/pm time)
Cardiff	07:15	☐	10:20 am
Manchester	☐	6:50 pm	12:10 am
Edinburgh	13:30	☐	10:10 pm

a) Complete the missing **departure** times in the table.

b) How **long** does the journey take to **Cardiff**? ☐

c) Robbie takes the bus to **Manchester** and Lucy the bus to **Edinburgh**.
How many **hours before** Robbie arrives in Manchester does Lucy arrive in Edinburgh? ☐ hrs

3

11 Write in the **missing** numbers.

a) $\frac{1}{2}$ **km =** ☐ **m**

b) $\frac{1}{10}$ **m =** ☐ **cm**

1

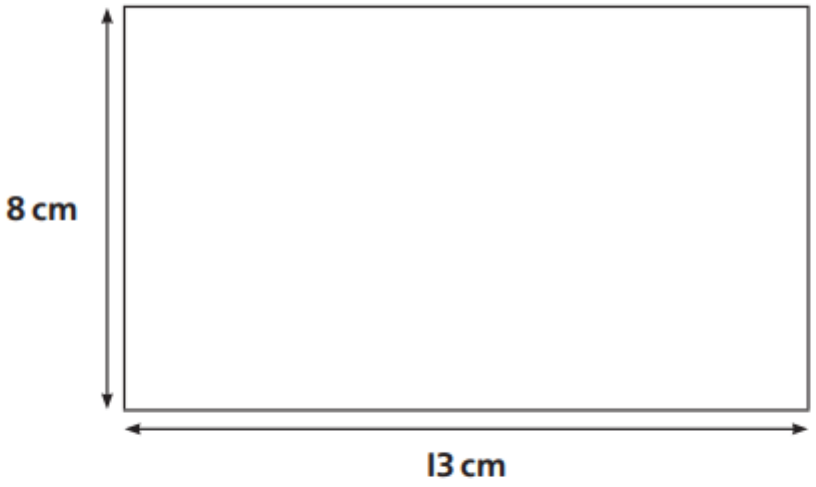
12 a) **Measure** this line to the nearest **mm**.

mm

b) In the space below, draw a line that is exactly **105 mm** long.

2

13 What is the **perimeter** of this rectangle?



Show your method

cm

2

14 Jane has a **£20** note. She spends **£12·60** on a ticket to the cinema.

a) How much **change** does she get? ☐

b) She then buys a drink for **£1·45.**
How much does she **have left**?

2

You can use the space below for workings.

15 **712 – 555 = ?**

Circle the correct answer.

167 **157** **57**

Explain how you can work this out in your head.

2