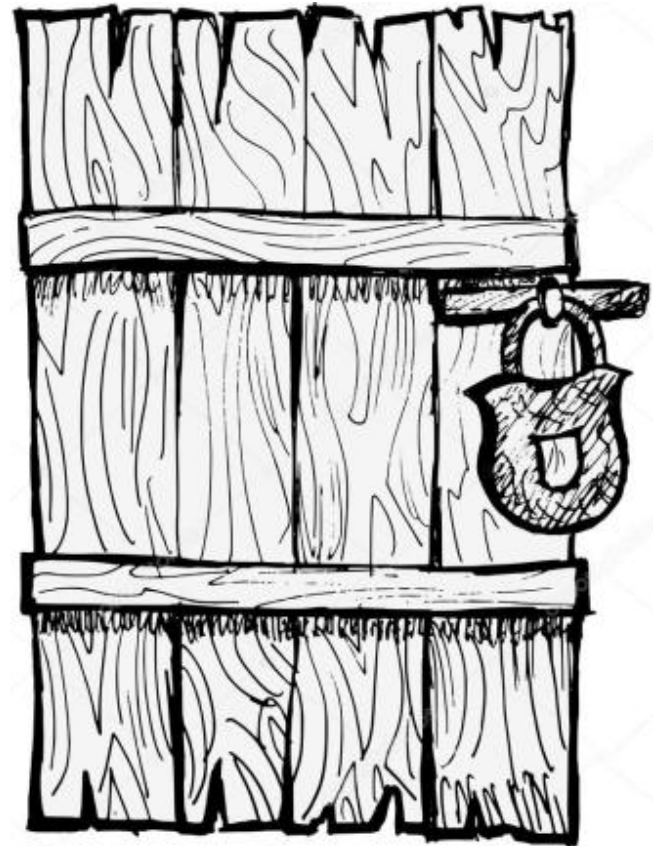




ESCAPE ROOM EDU

SPECIFIC

HEAT



Digital Link: <http://bit.ly/2mSVRjh>



Mission Objective

A MAD CHEMIST TRAPPED YOUR WHOLE CLASS IN THE CLASSROOM. IN ORDER TO ESCAPE, YOU MUST USE YOUR KNOWLEDGE OF SPECIFIC HEAT TO CONVINCHE HIM TO LET YOU GO. ANSWER THE QUESTIONS AT EACH LEVEL AND BE SURE TO RECORD EACH ANSWER. ONCE ALL LEVELS ARE COMPLETE, RETRIEVE THE COMPLETION CODE TO BREAK OUT AND SAVE THE DAY. YOU MUST HURRY AND ESCAPE BEFORE YOU REMAIN TRAPPED IN CLASS FOREVER!





LEVEL 1

Q1

mass of the substance \times heat capacity

B

heat capacity/
mass of the
substance

A

The specific heat capacity
of a substance is equal to

C

mass of the
substance /
heat capacity

D

mass of the substance $+$ heat capacity



LEVEL 1

Q2

50 J kg⁻¹ °C⁻¹

B

25 J kg⁻¹ °C⁻¹

A

In chemistry class, a student heats up a chemical from 10°C to 25°C which requires 30,000 J of energy. If the mass of the object is 40 kg, what would be the specific heat capacity of the chemical?

C

75 J kg⁻¹ °C⁻¹

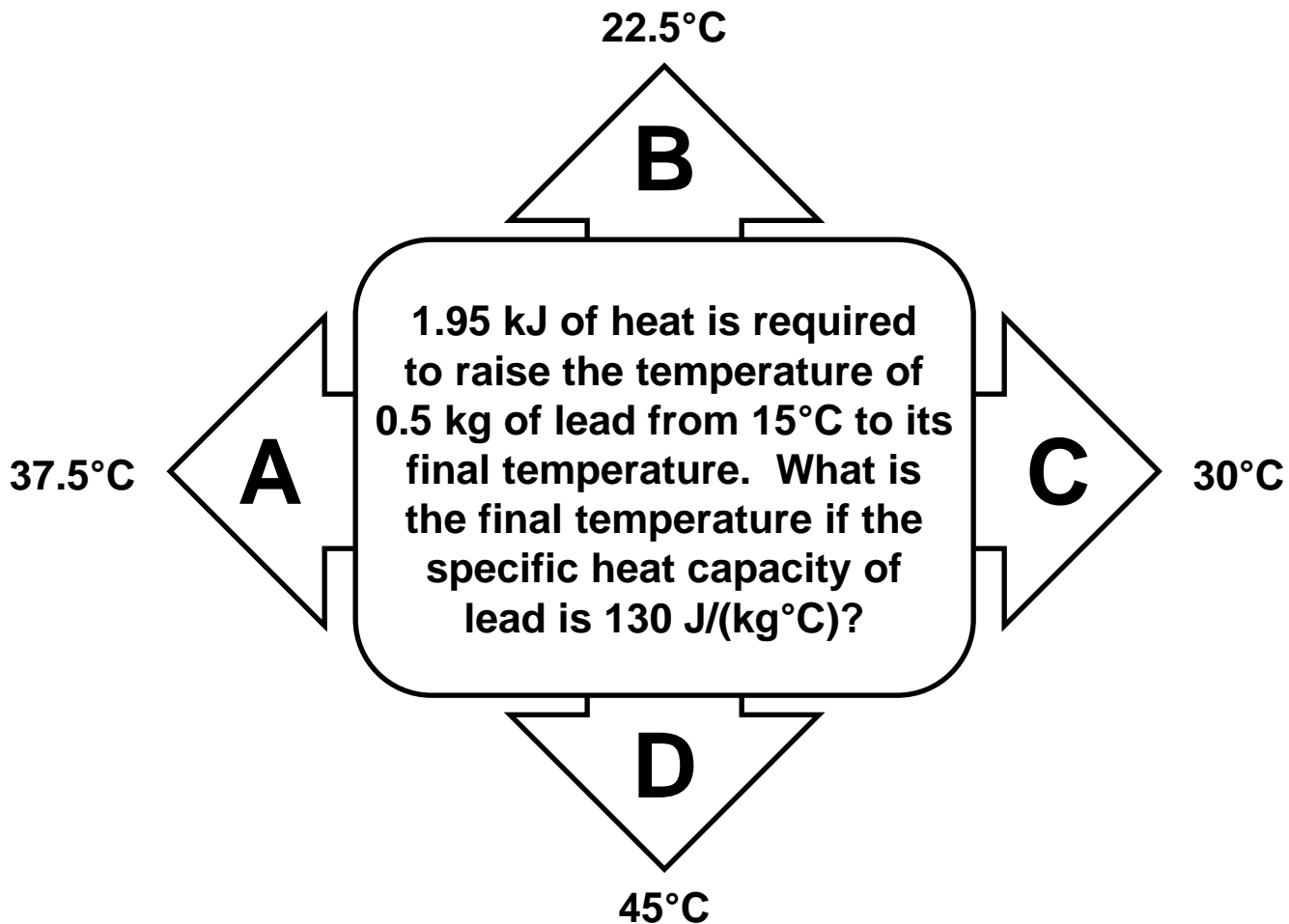
D

100 J kg⁻¹ °C⁻¹



LEVEL 1

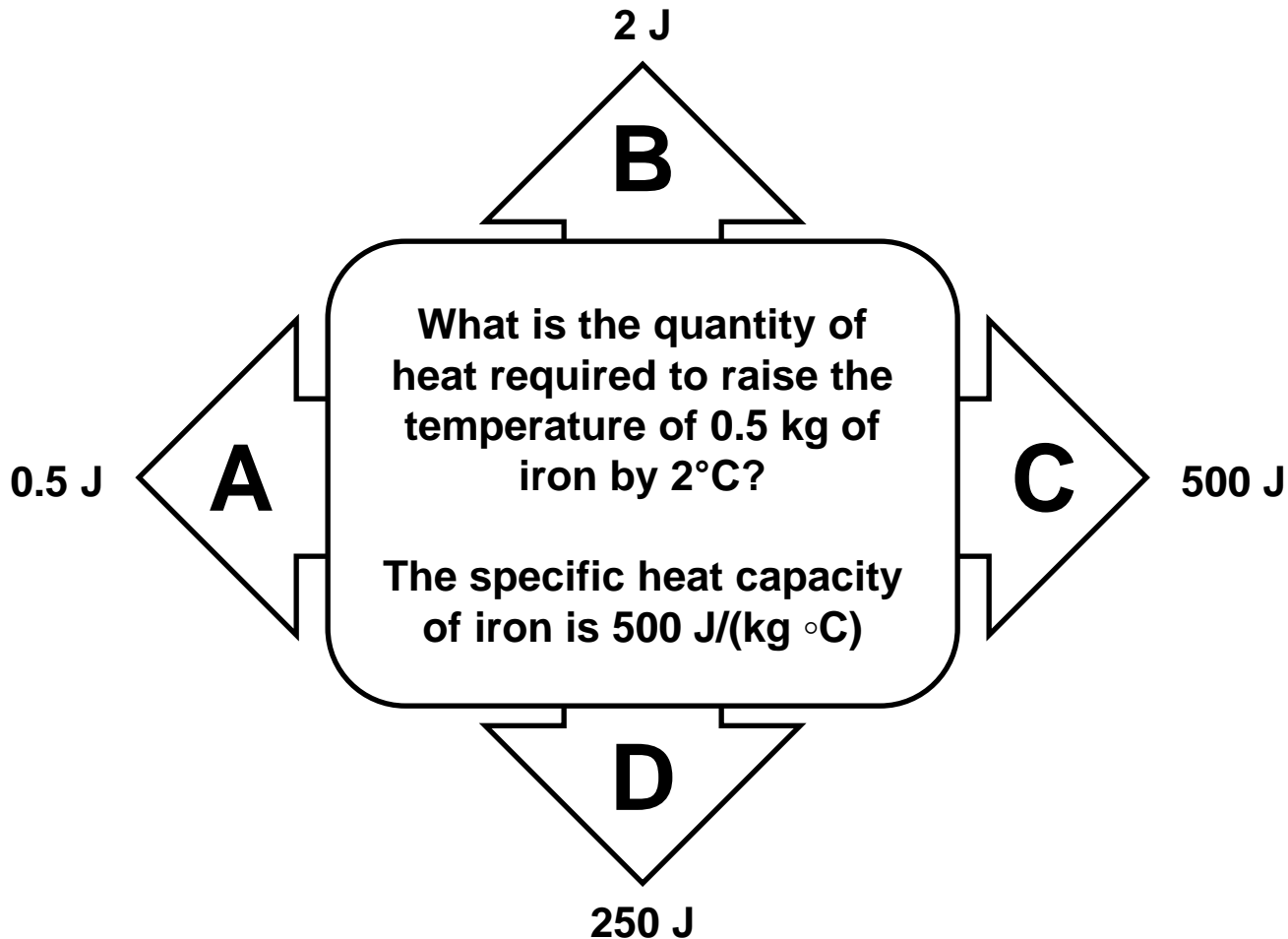
Q3





LEVEL 1

Q4





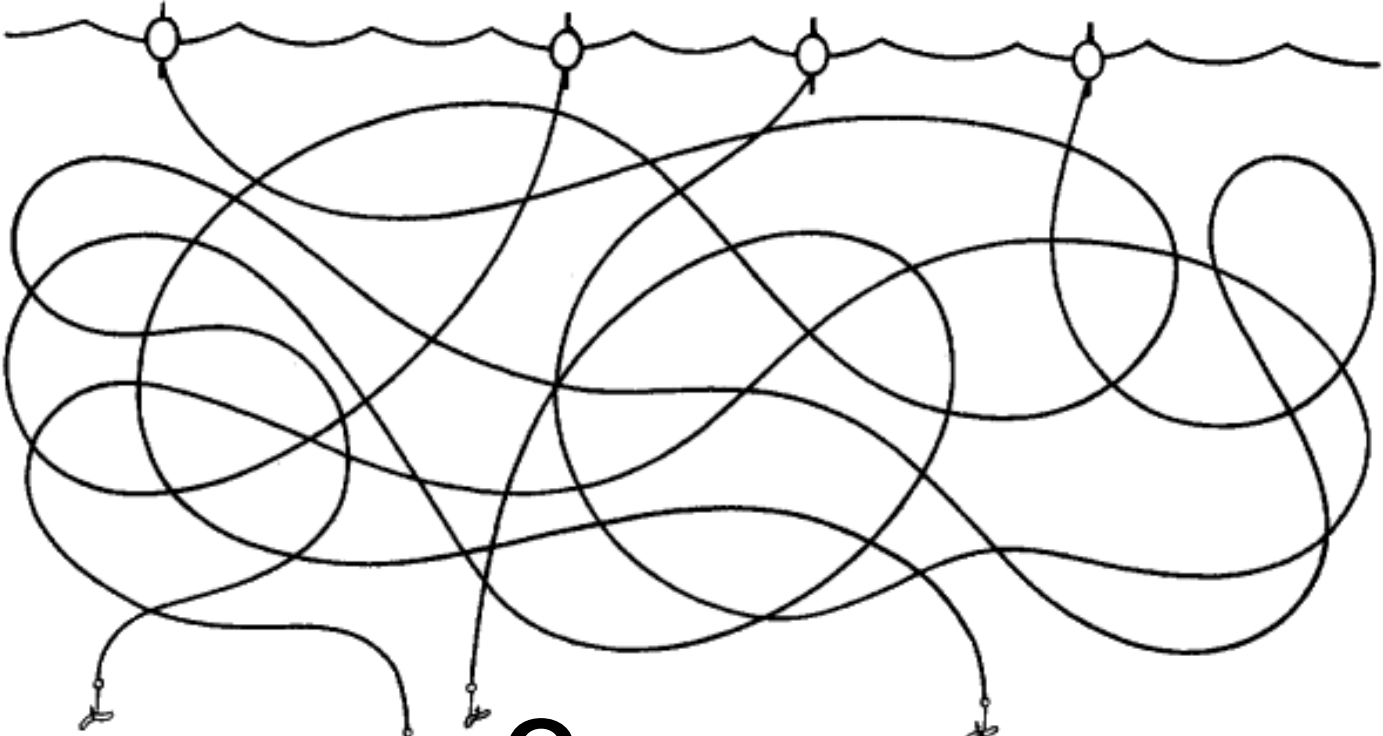
LEVEL 1

A

B

C

D



1

2

3

4



LEVEL 2

Solve each problem and write the matching letter on the blank above the answer.

I

5.0 g of copper (Cu) was heated from 20°C to 80°C . How much energy was used to heat Cu? The specific heat capacity of Cu is $0.092 \text{ cal/g } ^{\circ}\text{C}$

R

How much heat is absorbed by a 20g granite stone as energy from the sun changes its temp. from 10°C to 29°C ? The specific heat capacity of granite is $0.1 \text{ cal/g}^{\circ}\text{C}$

N

When 895 J of heat is applied to a piece of iron metal, the temperature increases by 55°C . What is the mass of the iron if its specific heat is $0.45 \text{ J/g}^{\circ}\text{C}$?

D

A 155 g unknown metal was heated from 25°C to 40°C . If it absorbed 569 calories of energy in the process, what is the specific heat of the metal?

A

If 5,800 J of energy are applied to a 15.2 kg piece of lead, by how much does the temp. change if the specific heat of lead is $0.128 \text{ J/g}^{\circ}\text{C}$?

E

If a 3.1 g ring is heated using 10.0 calories, its temperature rises 17.9°C . What is the specific heat capacity of the ring.

U

645 J is applied to a sample of glass with a mass of 28.4 g. If its temperature increases from -11.6°C to 15.5°C , what is the specific heat of glass?

L

2 kJ of energy is applied to a sample of water causing the temperature to be raised from 3°C to 212°C . What is the mass of this sample if the specific heat of water is $4.18 \text{ J/g}^{\circ}\text{C}$?

F

What is the mass, in kg, of a piece of copper if its temp. rises by 285°C when 186,000 J of energy is applied? The specific heat of copper is $0.387 \text{ J/g}^{\circ}\text{C}$.

2.98

36.2

0.84

0.24

0.24

0.18

38

1.69

2.98

27.6

2.29

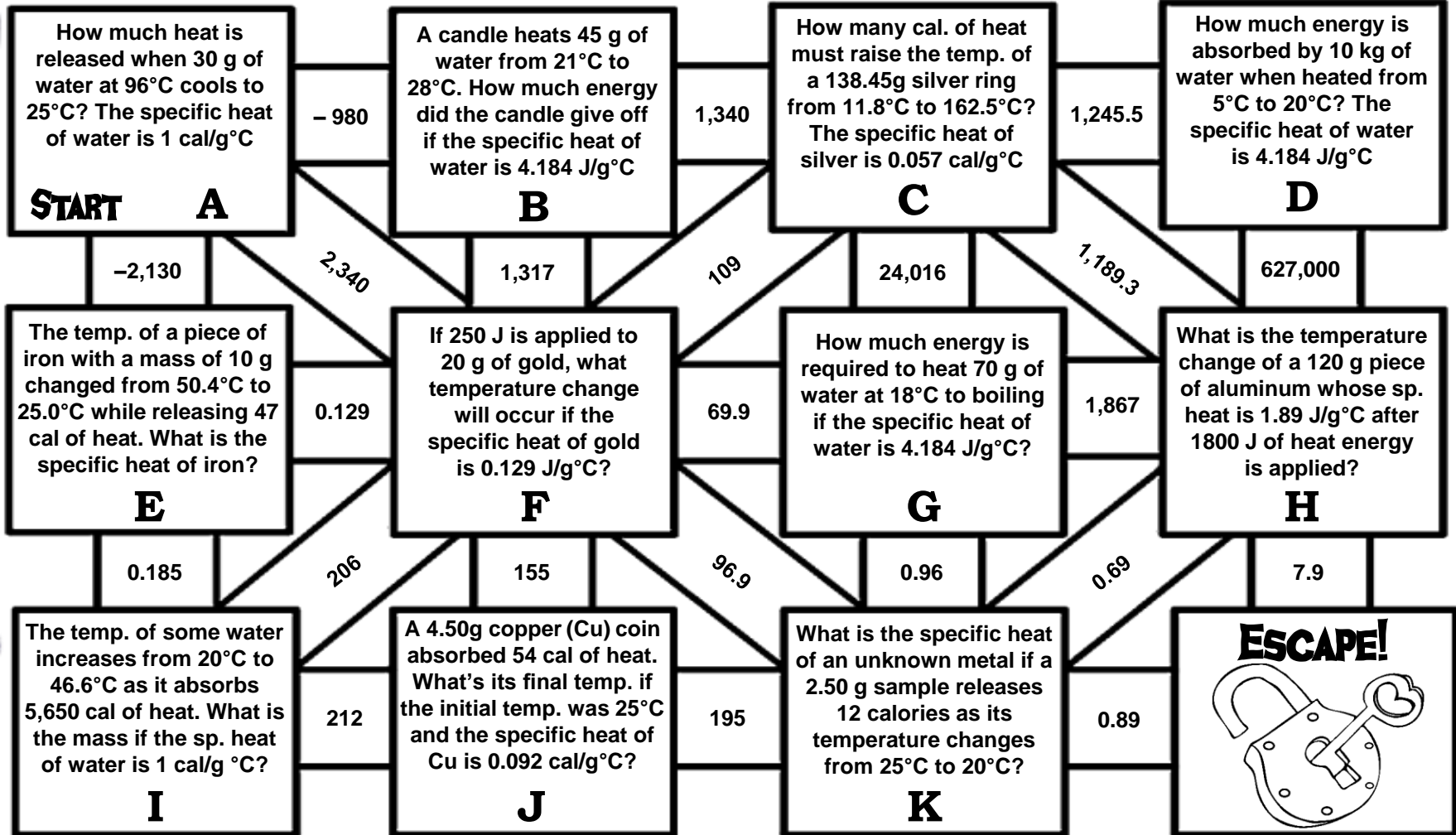
0.84

38

0.18

LEVEL 3

Use your answers to guide you to the end of the maze to make your escape.





MAKE YOUR ESCAPE!

SPECIFIC HEAT

Name _____

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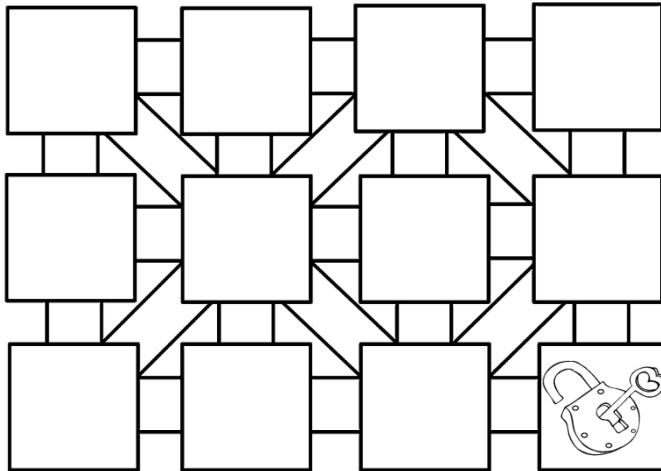
LEVEL 1

Codes
Answers

Q1	Q2	Q3	Q4
Digit 1	Digit 2	Digit 3	Digit 4

LEVEL 3

What does a farmer call a cow that has no milk?



LEVEL 3

Write the correct pathway of letters to the finish line
Draw arrows between each box

**CONGRATULATIONS,
YOU ESCAPED!**

Congratulations!

Enter the completion code to make your escape!

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