Name_____Classroom_____Number_____

Specific Heat Capacity

Energy = Mass x Specific Heat Capacity x Change in temperature

1000g =1kg

$Q = mc\,\Delta t$

1. How much **energy** is needed to raise the temperature of 2 kg of copper from 0°C to 10°C.The specific heat capacity of copper is 380J/kg°C.

Formula $Q = mc\Delta t$

Q =
M =
C=
Δt=

We get

Q =

Therefore, the amount of heat which increases the temperature of copper at 0°C,to 10°C with a mass of 2 kg, is _____ **J.**

---

2. A hot water bottle is filled with 0.8kg of water at 80°C. During the night it cools to 30°C. The specific heat capacity of water is 4200J/kg°C. How much **energy** has it given out?

Formula $Q = mc\Delta t$

Q =
M =
C=
Δt=

We get

Q =



LIVEWORKSHEETS

Name_____Classroom_____Number_____

Specific Heat Capacity

Energy = Mass x Specific Heat Capacity x Change in temperature

Therefore, the amount of heat which decreases the temperature of water at 80°C,to 30°C with a mass of 0.8 kg, is _____ **J.**

---

3. How much **energy** is needed to heat 2kg of cooking oil with a specific heat capacity of 2000J/kg°Cfrom 20°C to 120°C?

Formula $Q = mc\Delta t$

$Q =$ _____

$M =$ _____

$C =$ _____

$\Delta t =$ _____

We get

$Q =$ _____

Ans _____

LIVEWORKSHEETS

Name_____Classroom_____Number_____

Specific Heat Capacity

Energy = Mass x Specific Heat Capacity x Change in temperature

4. Andy has a bath and uses 1500g of water heated from 10°C to 40°C and with a specific heat capacity of 4200J/kg°C. How much **energy** does he use?

Formula $Q = mc\Delta t$

Q =

M =

C=

Δt=

We get

Q =

Ans

5. An electric kettle supplies 20,000J of energy to heat 0.5kg of water. What is the **temperature change**? The specific heat capacity of water is 4200J/kg°C.

Formula $Q = mc\Delta t$

Q =

M =

C=

Δt=

We get

=

Ans

LIVEWORKSHEETS

Name_____Classroom_____Number_____

Specific Heat Capacity

Energy = Mass x Specific Heat Capacity x Change in temperature

6. A piece of lead with a specific heat capacity of 126J/kg°C is given 5000J of energy to heat it from 20°C to 250°C. What was the **mass** of the piece of lead?

Formula $Q = mc\Delta t$

$Q =$

$M =$

$C =$

$\Delta t =$

We get

=

Ans

7. A 2 kg metal cylinder is supplied with 1600J of energy to heat it from 5°C to 13°C. What is the **specific heat capacity** of the metal?

Formula $Q = mc\Delta t$

$Q =$

$M =$

$C =$

$\Delta t =$

We get

=

Ans

LIVEWORKSHEETS

Name_____Classroom_____Number_____

Specific Heat Capacity

Energy = Mass x Specific Heat Capacity x Change in temperature

8. 201,600J is supplied to 600g of water with a specific heat capacity of 4200J/kg°C. What is the **change in temperature**?

Formula $Q = mc\Delta t$

Q =	201600 J
M =	
C=	
Δt=	

We get

[ ] = [ ]

Ans [ ]

9. ***CHALLENGE!*** Becky has a shower and uses 20,000g of water with a specific heat capacity of 4200J/kg°C. When the water is supplied with 336,000J of energy, it heats up to 50°C. What was the **starting temperature** of the water?

Formula $Q = mc\Delta t$

Q =	
M =	
C=	
Δt=	

We get

[ ] = [ ]

Ans [ ]

LIVEWORKSHEETS