

## Copper and MRSA – How scientists work

### Activity sheet B – Copper and MRSA

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#### Questions

#### *In vitro* evaluation of copper

- 1 Where was the *in vitro* evaluation of copper carried out?  
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- 2 The MRSA suspension was incubated at **20 °C / 37 °C / 100 °C** for three hours in step 1 to give the bacteria time to **die / multiply / expand**.
- 3 The agar plates are incubated at \_\_\_\_\_ °C because this is human body temperature.
- 4 MRSA bacteria can survive for:
  - a) **90 / 270 / more than 360** minutes on copper
  - b) **90 / 270 / more than 360** minutes on brass
  - c) **90 / 270 / more than 360** minutes on stainless steel
- 5 **Copper / brass / stainless steel** would be the best metal to use for door handles and taps in a hospital ward.

#### Clinical evaluation of copper

- 1 Where was the clinical evaluation of copper carried out?  
\_\_\_\_\_
- 2 Which materials were compared in this investigation?  
\_\_\_\_\_  
\_\_\_\_\_
- 3 In this investigation, samples were collected **1 / 5 / 7** days each week for \_\_\_\_\_ weeks.

- 4 Samples were collected **two / three / four** times a day to compare \_\_\_\_\_ and \_\_\_\_\_ time periods.
- 5 Copper containing and non-copper containing items were swapped over after **1 / 5 / 10** weeks to make sure the results were not affected by some items being in places that were used more often than others.
- 6 How did the scientists collect a sample from the toilet seats?  
\_\_\_\_\_  
\_\_\_\_\_
- 7 Scientists calculated the median (middle) number of colonies in each sample because there was a **big / small** range of results.
- 8 Where were most MRSA bacteria found?  
\_\_\_\_\_
- 9 Most MRSA bacteria were present in the samples at **7 am/ 5 pm**.
- 10 The results show that copper-containing toilet seats, tap handles and door push-plates **can / cannot** help prevent the spread of MRSA in hospitals.
- 11 Describe two other ways that the spread of MRSA can be reduced in hospitals.  
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