**Monday 23rd January 2023 – Lindisfarne Homework - LIGHT**

**Q1.**

**At the dentist**

(a)     When Jon bites a piece of apple, there is a force from Jon’s teeth on the apple.

(i)      Draw **ONE** arrow on the picture below to show the direction of the force from Jon’s **bottom** teeth when he bites the apple.





1 mark

(ii)     Label the main type of tooth Jon uses to bite the apple.

.........................................................................



(b)     Jon visits the dentist regularly to help stop tooth decay.

Describe **ONE** **other** way Jon can help stop tooth decay.

  .....................................................................................................................

1 mark

(c)     Jon looks around the dentist’s surgery.
He can see the following objects.

Tick **ONE** box to show which object light passes through best.



|  |  |  |  |
| --- | --- | --- | --- |
| mirror |   | glass |   |
| pencil |   | coat |   |

1 mark

(d)     The dentist uses a lamp to see Jon’s teeth clearly.

Draw **TWO** arrows on the diagram below to show the direction light travels for the dentist to see Jon’s teeth.





2 marks

**Q2.**

**Light sensor**

(a)     The light in a classroom comes from different sources.

Tick **ONE** box below to show one possible source of light in a classroom.



|  |  |  |  |
| --- | --- | --- | --- |
| plant |   | mirror |   |
| radiator |   | computer screen |   |

1 mark

(b)     Some children place a light sensor in the middle of the classroom.

The graph below shows how the light level changed over time.



Describe what happened to the light level between two and four minutes on the graph.

  ......................................................................................................................

1 mark

(c)     Describe **ONE** thing that could have happened in the classroom at six minutes to make the light level suddenly change.

  ......................................................................................................................

1 mark

(d)     The children measure the light above a desk and below a desk.



George says: ‘When the light sensor is under the desk, the reading on the sensor goes down.’

Write **true** or **false** next to each sentence below.

                                                                                                      **True** or **false?**

****   The light source is above the desk.                   ..............................

The light cannot pass through the desk.            ..............................

There is a shadow underneath the desk.           ..............................

1 mark

(e)     Complete the sentence using a word from the box below.

|  |
| --- |
| impermeable     opaque     transparent     solid |

   The sensor reading is lower when it is below the desk because

the desk is ...................................................

1 mark

**Q3.**

**Light**

(a)     The things below all make shadows in light.

Draw **ONE** line from each object to the shadow it could make.

Use each shadow **ONCE**.





1 mark

(b)     Jenny investigates which materials allow light to pass through. She holds different materials out in the sun.



Complete the table below to predict Jenny’s results.

Tick **ONE** box in each row. One has been done for you.



|  |  |  |
| --- | --- | --- |
| **Material** | **Some lightpasses through** | **No lightpasses through** |
| tissue paper |   |   |
| glass |   |   |
| mirror |   |   |
| clear plastic |   |   |
| cardboard |   |   |
| foil |   |   |

2 marks

(c)     Jenny sits by a lamp.

A shadow forms.



She wants to see if any other objects will cause a shadow in a dark room. She turns the lamp off. She sits in front of these objects instead of the lamp:



**television**                       **mirror**                         **plant**                 **night safety**

                                                                                                         **jacket**

(i)      Which **ONE** of these four objects will cause a shadow of Jenny in a **dark** room?

  ............................................................................................................

1 mark

(ii)     Why does a shadow form when Jenny sits in front of this object?

  Tick **ONE** box.

Because the object...

|  |  |  |  |
| --- | --- | --- | --- |
| is translucent. |   | reflects light. |   |
| is a light source. |   | is transparent. |   |

1 mark