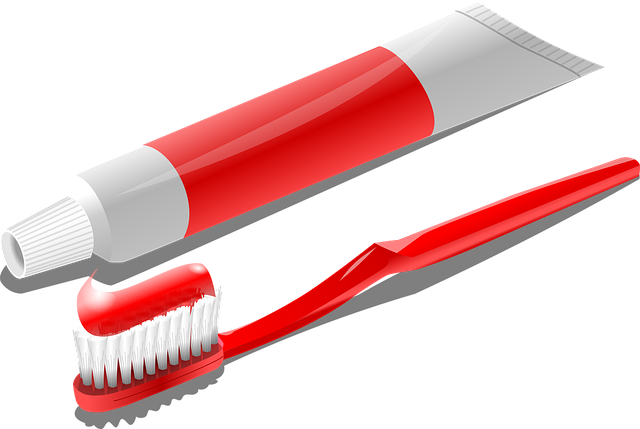
Starter worksheet answers

Circle your answer, then write a brief explanation for your answer or circle “guess”.

| Q1. Which of these is not true?  A - An algorithm contains step-by-step instructions (This is true)  B - An algorithm contains an ordered set of instructions (This is true)  C - An algorithm is a solution to a problem (This is true) **D - An algorithm has to be written in pseudocode (Correct answer)** | Q2. Identify the incorrect algorithm which will **not** produce the average of 3 numbers.  **A.**   | 1. **input num 1** 2. **input num 2** 3. **input num 3** 4. **sum = num1+num2+num3** 5. **avg=sum/3** | | --- |   **B.**   | 1. **input num 1** 2. **input num 2** 3. **input num 3** 4. **avg=sum/3** | | --- |   **C.**   | 1. **input num 1** 2. **input num 2** 3. **input num 3** 4. **avg = (num1+num2+num3)/3** | | --- |   **D.**   | 1. **input num 1** 2. **input num 2** 3. **input num 3** 4. **avg = (num2+num1+num3)/3** | | --- |   A - Wrong (this algorithm does work)  **B - Correct answer (sum has not been specified)**  C - Wrong (this algorithm does work)  D - Wrong (this algorithm does work) |
| --- | --- | --- | --- | --- | --- |
| **Explain your answer:**  An algorithm is an ordered set of instructions so can be written in any understandable form e.g. flow chart or bullet pointed list of steps.  **Or….It was a guess.** | **Explain your answer:**  What “sum” is has not been specified before it is used in avg.  **Or….It was a guess.** |

| Q3.  Here are the steps for heating soup.  Identify the correct order of steps for this algorithm.   | 1. Your soup is now ready 2. Pour soup into pan 3. When soup is bubbling turn hob off 4. Put pan on hob 5. Pick up pan 6. Turn hob on 7. Turn hob off | | --- |   A - 1,2,3,4,5,6,7 (Wrong order - soup ready at start!)  B - 4,5,1,2,3,5,7 (Wrong order - you need to pick up the pan before putting on hob)  C - 3,2,1,4,5,6,7 (Wrong order - soup can’t bubble before it has been put in pan)  **D - 5, 4, 2, 6,3,1,7 (correct answer)** | Q4.  Here is a teeth brushing algorithm. Identify the steps that are in the wrong order.   1. Pick up toothbrush 2. Pick up toothpaste 3. Put toothbrush into your mouth 4. Put toothpaste on brush 5. Brush your top teeth 6. Brush your bottom teeth 7. Put toothbrush back in holder 8. Put toothpaste away   A - 5 and 6 (Items can be returned in any order)  **B - 3 and 4 (correct answer - toothpaste must be on brush before putting in mouth)**  C - 7 and 8 (Mouth can be brushed in any order)  D - 1 and 2 (It doesn’t matter which is picked up first) |
| --- | --- | --- |
| **Explain your answer:**  There are a couple of steps which would still work the other way around e.g. 7,1 but this is the only option which makes a version of sense as the others all have items which cannot be done before others e.g. the soup can’t be ready before you’ve even picked up the pan.  **Or….It was a guess.** | **Explain your answer:**  Some of the steps could be performed the other way around e.g. putting away toothbrush before toothpaste but you wouldn’t put toothbrush in mouth before putting toothpaste on it.  **Or….It was a guess.** |