UNIT 3 – Technological Devices

Reading 1

Skills:

- Details
- Make inferences
- Vocabulary in context

Getting started: What kind of processes have been benefited by new technological advances?

3D PRINTER

Traditionally, the process of making physical products was long, expensive, and difficult. It was often hard for designers, engineers, architects, and manufacturers to build, test, and refine their ideas. With the arrival of better technology, an idea called rapid prototyping (RP) grew up during the 1980s as a solution to this problem: it means developing models and prototypes by more automated methods, usually in hours or days **rather than** the weeks that traditional prototyping used to take. 3D printing is a logical extension of this idea in which product designers make their own rapid prototypes, in hours, using sophisticated machines similar to inkjet printers.

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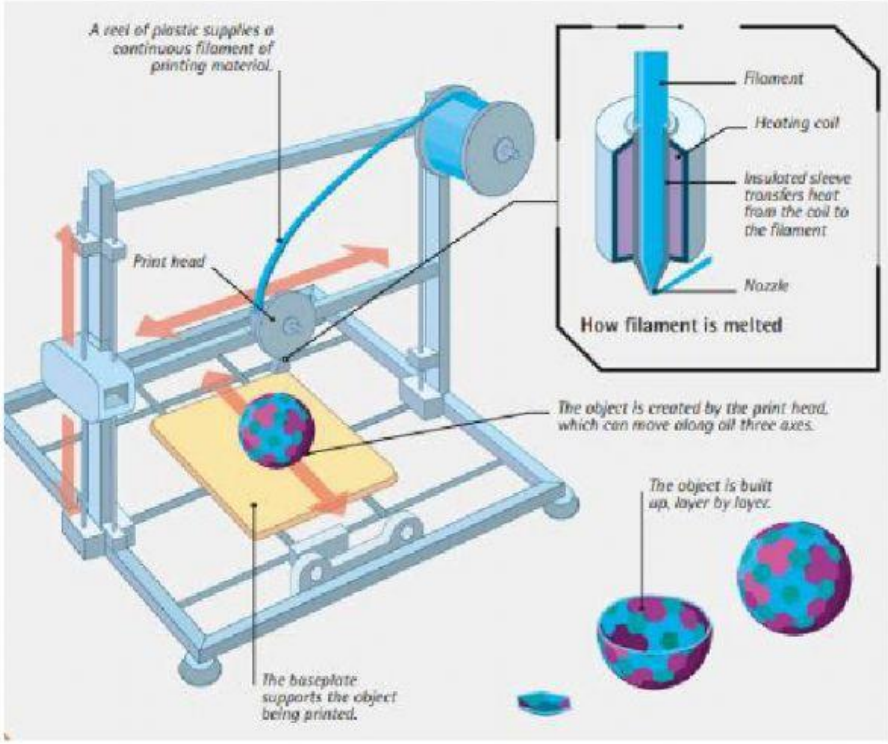
Similar in size to normal microwave ovens, this kind of machine works just like regular printers: A set of instructions is sent to the printer from a computer, and the printer turns **these** into physical objects. The latest 3D printers can build complex shapes and even objects with moving parts. In the future, they might be as cheap and as common as 2D printers are now, making it possible for us to make many of the things we buy today.

How the printer works is not a mystery. The printer melts a continuous filament of solid material and squeezes the liquid out of the print head through a fine nozzle onto a baseplate. The baseplate or the nozzle, or both, move according to a **set** of instructions to control where the liquid goes. When the first layer has been laid down, another layer is squeezed out on top of it. Then more layers are laid down, one by one, gradually building up the shape of a 3D object.



3D printing in space

The days when space station astronauts had to wait weeks or months for a tool or a replacement part to be sent up from Earth may be over. A 3D printer was delivered to the International Space Station (ISS) in November 2014, **enabling** astronauts to make some of the things they needed. The printer was

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designed to work in the ISS's weightless environment. A few weeks after it arrived, the crew used it to make a wrench; the instructions for the tool were sent to the ISS printer from Earth, and it took four hours to make.

**Adapted from How Super Cool Tech Works. DK Publishing.*

Answer the following questions:

1. According to paragraph 1, what's an advantage 3D printers bring?
    a. It's portable.
    b. It's very small.
    c. It helps save time.
    d. It uses ink as common printers.

2. According to paragraph 2, what can be inferred about 3D printers?
    a. They operate like a microwave oven.
    b. They are expensive.
    c. They come in different shapes.
    d. They have pieces that can be moved.

3. The word **these** in paragraph 2 refers to
    a. instructions
    b. printers
    c. objects
    d. ovens

4. What is stated about the process to make 3D objects?
    a. Some liquid comes out of the baseplate and solidifies to form any kind of figure.
    b. The layers form in the print head, and then they are located onto the baseplate.
    c. A solid substance is liquified and spread on the baseplate where the object begins forming.
    d. Someone operates the machine by moving some parts of the printer as the object is made.

5. The word **set** in paragraph 3 is closest in meaning to
    a. part
    b. place
    c. group
    d. equipment

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6. The word **enabling** in paragraph 4 is closest in meaning to
    a. commanding
    b. improving
    c. creating
    d. allowing

7. How long could it take astronauts at the ISS to make a hammer?
    a. 6 years
    b. Several months
    c. A few weeks
    d. A couple of hours

Read the following definitions and match the them with words from the text:

1. To become or make something become liquid as a result of heating: _____
2. A quantity or sheet of something that lies over a surface or between surfaces: _____
3. To get liquid out of something by pressing or twisting it hard: _____
4. A metal tool with an end with a special shape for holding and turning nuts and bolts (= small metal rings and pins that hold things together): _____
5. All the people working on a ship, plane, etc.: _____

What do you think?

If you could use a 3D printer right now, what object would you make?

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