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**Graphic Technology 1**

**Reading Assessment**

**Screen Printing**

**Screen printing** is a printing technique that uses a [woven](http://en.wikipedia.org/wiki/Woven) [mesh](http://en.wikipedia.org/wiki/Mesh) to support an ink-blocking [stencil](http://en.wikipedia.org/wiki/Stencil) to receive a desired image. The attached stencil forms open areas of mesh that transfer ink or other printable materials which can be pressed through the mesh as a sharp-edged image onto a [substrate](http://en.wikipedia.org/wiki/Substrate_(materials_science)). A fill blade or [squeegee](http://en.wikipedia.org/wiki/Squeegee) is moved across the screen stencil, forcing or pumping ink into the mesh openings for transfer by capillary action during the squeegee stroke. Basically, it is the process of using a stencil to apply ink on to another material whether it be t-shirts, posters, stickers, vinyl, wood, or any material that can keep the image on to its surface.

In Screen printing the screen is made of a piece of mesh stretched over a frame. A stencil is formed by blocking off parts of the screen in the negative image of the design to be printed; that is, the open spaces are where the ink will appear on the substrate.

Before printing occurs, the frame and screen must undergo the pre-press process, in which an emulsion is 'scooped' across the mesh and the 'exposure unit' burns away the unnecessary emulsion leaving behind a clean area in the mesh with the identical shape as the desired image. The surface (commonly referred to as a pallet) that the substrate will be printed against is coated with a wide 'pallet tape'. This serves to protect the 'pallet' from any unwanted ink leaking through the substrate and potentially staining the 'pallet' or transferring unwanted ink onto the next substrate. Next, the screen and frame are lined with a tape. The type of tape used for this purpose often depends upon the ink that is to be printed onto the substrate. The last process in the 'pre-press' is blocking out any unwanted 'pin-holes' in the emulsion. If these holes are left in the emulsion, the ink will continue through and leave unwanted marks. To block out these holes, materials such as tapes, specialty emulsions and 'block-out pens' may be used effectively.

The screen is placed atop a substrate. Ink is placed on top of the screen, and a floodbar (or squeegee) is used to push the ink through the holes in the mesh. The operator begins with the fill bar at the rear of the screen and behind a reservoir of ink. The operator lifts the screen to prevent contact with the substrate and then using a slight amount of downward force pulls the fill bar to the front of the screen. This effectively fills the mesh openings with ink and moves the ink reservoir to the front of the screen. The operator then uses a [squeegee](http://en.wikipedia.org/wiki/Squeegee) (rubber blade) to move the mesh down to the substrate and pushes the squeegee to the rear of the screen. The ink that is in the mesh opening is pumped or squeezed by capillary action to the substrate in a controlled and prescribed amount, i.e. the wet ink deposit is proportional to the thickness of the mesh and or stencil. As the squeegee moves toward the rear of the screen the tension of the mesh pulls the mesh up away from the substrate (called snap-off) leaving the ink upon the substrate surface.

While the public thinks of garments in conjunction with screen printing, the technique is used on tens of thousands of items, including decals, clock and watch faces, balloons, and many other products.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mod \_\_\_\_\_\_\_\_\_\_\_\_

1) The author describes the ways that the screen is made. Explain the steps in making the screen and describe problems that occur if the screen is made improperly.

First the screen and frame are subject to the pre-press. This is where emulsion is spread across and an exposure unit burns away unnecessary emulsions leaving a clean mesh, with the shape of the desired images. Pallet tape is then put over it to protect from any unwanted ink leaking. Finally it blocks out any pin holes left in the emulsion. Ink is then driven across the screen with a squeegee which pushes ink through pin holes onto the mesh, these are distributed proportional to the size of the stencil.

2) Find the word emulsion in the third paragraph. Using the context clues, write a sentence in which you give the definition of the word. Using complete sentences and textual support, explain how you came to understand the meaning.

I think emulsion is a liquid that is used in screen printing, it is a variety of liquids that are used as colors and pushed through pin holes to make a specific design,