

# Science on the Sphere: Attack of the Giant Cell

## LESSON #: 1

TITLE: Organs and Art

OVERVIEW: Make one (or part of) an organ system using arts materials. Examples: paper mache, recycled materials, painting, pipe cleaners, make a mobile, balloons, pipes, etc. Don't forget you can do plants, too.

### KEY CONCEPTS:

Students learn how organs systems work and express their knowledge using art concepts.

### STANDARD(S)-BENCHMARK(S):

SC 7.4.3 (sort of) Describe the levels of organization in organisms

FA 6-8.1.2 Apply selected elements and principles of art and design to communicate a particular message or opinion in an original work of art

### TEACHER BACKGROUND:

Common animal (including human) organs include the heart, lungs, brain, eye, stomach, spleen, bones, pancreas, kidneys, liver, intestines, skin, uterus, and bladder. Animal organs inside the thorax or abdomen are often referred to as *internal organs* (this term is not used for organs inside the head). The internal organs collectively are often called *viscera*, the plural of the rarely-used term *viscus*.

<http://encyclopedia.thefreedictionary.com/Organ+systems>

Plant organs can be divided into vegetative and reproductive. Vegetative plant organs are root, stem and leaf, while reproductive are flower, seed and fruit.

The vegetative organs are essential for maintaining the life of a plant (they do the vegetative, vital functions, like photosynthesis), while the reproductive are essential in the reproduction. But, if there is asexual vegetative reproduction, the vegetative organs are those which create the new generation of plants, therefore usually creating a clonal colony.

<http://encyclopedia.thefreedictionary.com/Organ+systems>

The creative arts are often divided into more specific categories, such as decorative arts, plastic arts, performing arts, or literature. So for example painting is a form of plastic art, and poetry is a form of literature.

An **art form** is a specific form for artistic expression to take, it is a more specific term than art in general, but less specific than “genre.” Some examples include, but are by no means, limited to:

- painting
- drawing
- printmaking
- sculpture
- ceramics
- graphic design
- digital art
- mixed media
- music
- poetry
- game design
- architecture
- cinema
- theatre
- photography
- model making
- cartooning
- origami
- mosaic
- graffiti
- internet art
- wood carving

A **genre** is a set of conventions and styles for pursuing an art form. For instance, a painting may be a still life, an abstract, a portrait, or a landscape, and may also deal with historical or domestic subjects. The boundaries between form and genre can be quite fluid. So, for example, it is not clear whether song lyrics are best thought of as an art form distinct from poetry, or a genre within poetry. Is cinematography a genre of photography (perhaps “motion photography”) or is it a distinct form?

An artistic medium is the substance the artistic work is made out of. So for example stone and bronze are both mediums that sculpture uses sometimes. Multiple forms can share a medium (poetry and music, both use sound), or one form can use multiple media.

An artwork or artist’s **style** is a particular approach they take to their art. Sometimes style embodies a particular artistic philosophy or goal. We might describe Joy Division as Minimalist in style, in this sense, for example. Sometimes style is intimately linked with a particular historical period, or a particular artistic movement. So we might describe Dali’s paintings as Surrealist in style in this sense. Sometimes style is linked to a technique used, or an effect produced, so we might describe a Roy Lichtenstein painting as pointillist, because of its use of small dots, even though it is not aligned with the original proponents of Pointillism. Lichtenstein used Ben-Day dots, which were used to

color comic strips: they are evenly-spaced and create flat areas of color; pointillism employs dots that are spaced in a way to create variation in color and depth.

Many terms used to describe art, especially recent art, are hard to categorize as forms, genres, or styles; or such categorizations are disputed. No one doubts there is such a thing as land art, but is it best thought of as a distinct form of art? Or, perhaps, as a genre of architecture? Or perhaps as a style within the genre of landscape architecture? Are comics an art form, medium, genre, style, or perhaps more than one of these?

<http://en.wikipedia.org/wiki/Art>

DURATION: at least two class periods

### VOCABULARY:

- painting: **Painting**, meant literally, is the practice of applying color to a surface (support) such as paper, canvas, wood, glass, lacquer, or other. However, when used in an artistic sense, the term "painting" means the use of this activity in combination with drawing, composition and other aesthetic considerations in order to manifest the expressive and conceptual intention of the practitioner.
- drawing: **Drawing** is a visual art which makes use of any number of drawing instruments to mark a two-dimensional medium. Common instruments include graphite pencils, pen and ink, inked brushes, wax color pencils, crayons, charcoals, pastels, markers, stylus, or various metals like silverpoint.
- printmaking: **Printmaking** is the process of making artworks by printing, normally on paper. Except in the case of Monotyping, the process is capable of producing multiple copies of the same piece, which is called a print. Each copy is known as an impression. Painting or drawing, on the other hand, create a unique original piece of artwork. Prints are created from a single original surface, known technically as a matrix. Common types of matrices include: plates of metal, usually copper or zinc for engraving or etching; stone, used for lithography; blocks of wood for woodcuts and linoleum for linocuts. But there are many other kinds, discussed below. Each print is considered an original work of art, not a copy. Works printed from a single plate create an edition, in modern times usually each signed and numbered to form a limited edition. Prints may also be published in book form, as Artists' Books. A single print could be the product of one or multiple techniques.
- sculpture: A **sculpture** is a three-dimensional object, which for the purposes of this object is man-made and selected for special recognition as art.
- ceramics: **ceramics** and **ceramic art** in the art world means artwork made out of clay bodies and fired into the hardened ceramic form. Some ceramic pieces are classified as fine art, while many others can be classified as one of the decorative, industrial or applied arts (the application of design and aesthetics to objects of function and everyday use). The identification of a specific pottery piece as a "work of art" is not always clear. Ceramic art usually, but not always, was

- intended* by the maker as art. It may have a signature, designer name or brand name stamp on the bottom. Ceramic art can be either manufactured by individuals or in a factory that employs artists to design, produce or decorate the ware.
- graphic design: **Graphic design** is the process of communicating visually using text and images to present information. Graphic design practice embraces a range of cognitive skills, aesthetics and crafts, including typography, visual arts and page layout. Like other forms of design, graphic design often refers to both the process (designing) by which the communication is created and the products (designs) which are genera
  - digital art: **Digital art** is art created on a computer in digital form. Digital art can be purely computer-generated, such as fractals, or taken from another source, such as a scanned photograph, or an image drawn using vector graphics software using a mouse or graphics tablet. Though technically the term may be applied to art done using other media or processes and merely scanned in, it is usually reserved for art that has been non-trivially modified by a computing process (such as a computer program, microcontroller or any electronic system capable of interpreting an input to create an output); digitized text data and raw audio and video recordings are not usually considered digital art in themselves, but can be part of a larger project.
  - mixed media: **Mixed media**, in visual art, refers to an artwork in the making of which more than one medium has been employed.
  - model making: A scale model is a representation or copy of an object that is larger or smaller than the actual size of the object being represented. Very often the scale model is smaller than the original and used as a guide to making the object in full size. Scale models are built or collected for many reasons.
  - origami: **Origami** (□□□ *origami*?) (literally meaning "folding paper") is the art of paper folding. The goal of this art is to create a given result using geometric folds and crease patterns. *Origami* refers to all types of paper folding, even those of non-Chinese origin.
  - mosaic: **Mosaic** is the art of decoration with small pieces of colored glass, stone or other material. It may be a technique of decorative art, an aspect of interior decoration or of cultural and spiritual significance as in a cathedral. Small tiles or fragments of pottery (known as *tesserae*, diminutive *tessellae*) or of colored glass or clear glass backed with metal foils are used to create a pattern or picture.
  - wood carving: **Wood carving** is a form of working wood by means of a cutting tool held in the hand (this may be a power tool), resulting in a wooden figure or figurine (this may be abstract in nature) or in the ornamentation of a wooden object. The phrase may also refer to the finished product, from individual sculptures, to hand-worked mouldings composing part of a tracery.

#### MATERIALS NEEDED:

Recycled materials, anything that they might find in the house. Some things to remind the students:

Emphasize the importance of using safe or non-toxic products.  
It is better to use the same or similar products to make the models accurate.  
Parts should be correct size in relationship to each other.  
An additional thing to think about would be to articulate or not articulate the system.

PROCEDURE:

- 1) Have students read about cells, and organ systems of plants and animals.
- 2) Students will pick a system they would like to explain.
- 3) Research the selected system, for specific details and spatial relation.
- 4) Chose medium to explain the system.
- 5) Using similar materials create the chosen system. This may be any size just as long as it is to scale.
- 6) Share knowledge with class.

EXTENDED ACTIVITIES: [optional]

Create the Jello Cell-see the below website for more information.

RESOURCES:

Web: <http://www.enchantedlearning.com/subjects/animals/cell/jello/index.shtml>