# Cell project 3d model materials

Updated on July 15, 2019 by Karen G Blaettler Cells, the building blocks of all known life, they have many similar features with some specific differences based on cellular function. Creating cellular models helps students visualize cells and helps teachers assess a student's understanding of cellular structures. The complexity and detail required in a model depends on the level of rank and teacher guidance. Your project might specify the creation of an animal cell model, or it might require construction of a plant cell model. Or, the assignment may require a specific type of cell, such as a nervous blood cell or a red blood cell. Project directions should provide a list of cellular organelles (structures inside or part of the cell) or refer to a source to identify which cell parts should be included in the model. The project will likely require labels or a key to identify cell parts. Your project may require specific colors for specific cell parts. For example, chloroplasts in a plant cell model will most likely have to be green to represent the green chlorophyll they contain. Carefully review the indications. Ask questions. Follow the project instructions. Project completion includes the expiration date of the assignment. Don't wait until the last minute. Models represent objects that may be too large, such as the solar system, or too small, such as cells or atoms, to build at their actual size. The model involves being three-dimensional (abbreviated to 3D) instead of a drawing. Computer models like Cells Alive! it can also be used to represent objects. Sometimes animal cell designs (or plant cell designs) require special materials such as being edible or not using materials that can stain, stink or rot. Some teachers may allow original computer models, while others may not. Again, be sure to follow the directions and, if necessary, ask for clarification. Animal cell models are usually a bit spherical. A half ball of polystyrene will work. Other choices could be a hemisphere of paper (shape around a bowl, ball or balloon; let it dry completely) or half of an old volleyball, basketball or soccer ball. In the cell, the organelles float in the cytosol, the liquid material that fills the cell. Cytoplasm refers to combined organelles and cytosol. If you are using a polystyrene hemisphere, then paint the flat surface a light color or cover with paper. For the paper or ball section, first add the organelles and cover with transparent film or cellophane at the end. Represent a simple membrane with light cellophane or plastic casing. If necessary (or extra credit), represent the most correct double layer of the cell membrane with bubble casing or a double layer of cellophane or plastic casing. Or use one or two layers of gauze or a coarsely woven fabric to represent the cell membrane. They represent blisters, pores that help the entry and exit of larger molecules, with glass head beads stuck through the cell membrane in the cell structure. Or sequin glue, small stickers or hole-punch stitches on the cell cell The nucleus is the largest organelle in the animal cell. Use a tennis or similar ball to represent the core. Put in a bag of sandwiches to represent the nuclear membrane. The organelles added depend on the assignment requirements. Endoplasmic lattice: represents these long loop structures with handcrafted tape with wire edges that can be folded into shapes. Or use a long balloon, the kind used to make hot air balloon animals. Ribosomes: Use small beads, all of a color, to represent these small spherical organelles. Most will be close to the endoplasmic lattice, but some should be scattered throughout the model (not the nucleus). Mitochondria: Batteries could represent mitochondria (for safety reasons, consider using images cut from an advertisement). Golgi Body: Use walnut or pecan halves or their shells to represent these oval structures with twisted internal structure. Cytoskeleton: Microtubules, microfilaments and intermediate filaments provide a skeletal structure in the cell. Tube cleaners of different sizes can model these cellular structures. Cell wall (plant cell model): Use a box instead of a spherical container. The cell membrane goes inside the box and the rest of the cytoplasm inside the cell membrane. Chloroplasts (plant cell model): Use green beads or meads, larger than ribosomes, to represent chloroplasts. Most chloroplasts occur along the inside of the cell membrane, but some will be scattered across the cytosol. Central vacuole (plant cell model): use an appropriately sized bag filled with air or crumpled plastic casing. The large vacuole should be larger than the nucleus. The model will be incomplete without labels or a key. Labels can be made using toothpicks with cell part names attached as flags. If the size of the template allows, name labels can be bound directly to each part. You may need a key that uses numbers or colors to identify and explain each cell part. An edible 3D model can be made from cake or jelly. Use various fruits and candies to represent the different organelles found in the cell. Once again, follow the instructions of the assignment to achieve a positive result. About author Karen she holds a Bachelor of Science degree in geology. She worked as a geologist for ten years before returning to school to earn her teaching credentials of multiple subjects. Karen taught middle school science for over two decades, earning a Master of Arts in Science Education (emphasis in 5-12 geosciences) along the way. Karen now and teaches STEAM science and classes. Updated on July 15, 2019 by Karen G Blaettler Cells, the building blocks of all known life, they have many similar features with some specific differences based on cellular function. 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