25 Ideas for Engaging Students Using Biology Projects
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In honor of the Texas Association of Biology Teachers' 25th anniversary, here are 25 project ideas to get learning off to a good start. The ideal time to introduce students to project-based learning is ***now***.

By using engaging projects, you can grab student interest and establish a solid foundation of important skills, such as knowing how to conduct research, engage experts, and collaborate with peers. One of the most important aspects of any of these projects is to allow student decision making and control. That doesn't mean you can shirk your duty as guide, helper, encourager, and ultimate determiner of projects and their parameters.

1. Project Based Learning: Teachers don't have to look far to find good project ideas. Projects often come from local problems identified by the students themselves.

2. How Is It Affected: Students often have little comprehension of how things affect other things. Consider having students design their own experiments to determine the effects of an environmental on some organism in the environment. This is a sure way to get them to learn how science really works.

3. Defy Gravity: Give your students a chance to investigate what happens near zero gravity by challenging them to design an experiment for NASA to conduct at its 2.2 second drop tower in Brookpark, Ohio. Or, propose a project that may land you a seat on the ultimate roller coaster (aka: the "vomit comet").

4. Connect Across Disciplines: When students design and build kinetic sculptures, they expand their understanding of art, history, engineering, language arts, and technology. Use such interdisciplinary project insights to develop additional learning for your own curriculum.

5. Honor Home Languages: English language learners can feel pressured to master English fast, with class time spent correcting errors instead of using language in meaningful ways. Instead, why not engage these students in critical thinking, collaboration, and the use of digital tools?

6. Rethink Lunch: Make lunch into a learning opportunity with a project that gets students thinking more critically about their mid-day meal.

7. Take a Learning Expedition: Take students on authentic learning expeditions, often in neighborhoods close to home. Projects that are close to home often have more meaning to students than a costly field trip.

8. Find a Pal: Consider a project that joins your classroom and students with one some distance away. The distance could be a few miles, another state, or even on another continent. Ecological

and cultural projects can bring students and colleagues into a closer relationship that will be treasured for life. Your students benefit from the insights and collaborations with others.

9. Get Minds Inquiring: What's in that leaf litter? What are things made of? Science projects that emphasize inquiry help students make sense of their world and build a solid foundation for future understanding. Connect inquiry activities to longer-term projects, such as creating a classroom museum that showcases students' investigations.

10. Learn through Service: How can your students help solve a community problem? They may decide that a park needs new trees and flower gardens, or that a creek needs to be cleaned up. If the ideas come from your students, you are likely to have greater success with the project. Do not fail to get press for the work your students do for their community.

11. Locate Experts: When students are learning through authentic projects, they often need to connect with experts from the world outside the classroom. Find the knowledgeable experts you need and ask them for their time in your classroom. Most will gladly accept your offer.

12. Build Empathy: Projects that help students see the world from another person's perspective build empathy along with academic outcomes. Projects might focus on the climate, automobile exhaust and air quality, or a hundred other ideas.

13. Investigate Climate Science: Take students on an investigation of climate science by doing introductory activities to build a foundation of understanding, intensive observing periods when students gather and report data, and research investigations that students design and conduct.

14. Problem-Solvers Unite: Ask students how mathematics impacts some problem they identify in the curriculum. They might have a math fair that takes mathematics out of the classroom and into the community, where everyone gets a chance to try their hand at problem solving.

15. Harvest Pennies: Employ students to raise money for some project of their choice. For instance, young philanthropists may raise and donate money for some laboratory equipment that is needed for the completion of a project they want to do. Or they may wish to donate to some charitable cause that relates to your curriculum.

16. Gather Stories: Instead of teaching history from textbooks, put students in the role of historian and have them make sense of the pas by reporting on some historical event in your curriculum area.

17. Just Talk About It: Allow students to carry out oral history projects in area of your curriculum. For instance, they could interview their local doctor to find out how they learned about the results of the human genome project or a vet's reaction to hearing about the devastation of mad cow disease.

18. Place-Based Projects: Make local heritage, landscapes, and culture the jumping-off point for compelling projects.

19. News They Can Use: Have students publish newspapers, magazines, radio stations, or tv shows. Such journalism projects give them real-life experiences now.

20. Heroes Students Know: Ask students to create a visual and textual representation of a hero in their own life.

21. What's In My Genes: Allow students to browse Victor McCusick's Online Inheritance in Man (OMIM) Web site and determine some traits that appear to be dominant, recessive, or

gender linked. Then have them interview relatives and map a particular trait through their family tree.

22. They're Everywhere, They're Everywhere: Students should be given the opportunity to collect, properly identify and mount, and display insects. The key word in the last sentence is "properly". If done properly, a class insect collection can easily become a school online museum.

23. Mapmaking Is Important: Encourage students to develop maps of local ecological resources, habitats of particular organisms, etc. They will learn important observation and measurement skills, as well as drawing or computer-assisted drawing, and the importance of keys.

24. Think Global, Act Local: Have students study a global problem and report in teams. Once their team reports have concluded, the next step is to allow them the opportunity to determine and carry out local solutions, measuring their results over time.

25. Bring Them On: Near the end of the school year once students have completed a number of projects (Public Schools Week is often a time of mandated open house with parents visiting schools), host an Open House for the Community. Publish the opportunity in the local newspaper, try to get television coverage. Students should describe their projects to visitors. This will help them with public speaking, recall, and give them an additional sense of accomplishment.

Previous students have often thanked me for being their teacher. They almost always comment on a particular project they completed and almost never report on anything that I taught. It is always about relationships we developed, their activities, and what they interpreted as my passion that they remember. Give your students to opportunities to direct their learning with you as their guide and see what a great year both of you can have!