Seed germination worksheet for grade 3



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It seems like an easy topic, but some produce people consider to be a vegetable is actually a fruit! In my third grade classroom, I laid out 7 items and had students tell me if they were a fruit or a vegetable. A couple of the items were very tricky for students. I included a kiwano (horned) melon, corn on the cob, starfruit, coconut, edamame, pomegranate and avocado. Students tell me if they were all fruit!Fruit - develops from a flower of a plant and contains seeds Vegetable - edible plant or plant part that may or may not have a role in the plant's reproductive cycle. Once we learned that fruit contains seeds, we reviewed what a seed is a small object produced by a plant from which a new plant can grow. They carry the beginning of plants inside of them. We talked about how seeds can travel (which we learned more about on day 2). Then, students estimated how many seeds would be in each fruit. We cut the fruit open and students recorded the name of the fruit. We cut the fruit open and students were ready to explore! The students recorded the name of the fruit. here for a free printable: Investigating Seeds Afterwards, we compared our seed estimations to the average number of seeds each fruit contained! We talked about how seeds are attached because they need water and nutrients / minerals from the soil to develop. Then, we discussed the different properties we recorded. Students compared the different sizes of each seed. We measured the different sizes of each seed underneath the parent plant. They would be too crowded. The established plant might not leave the new plants with enough sunlight and water to develop properly or survive. Students identified the size and shape of the seed being the main factor of how seeds are dispersed. Then, we looked at a variety of different seeds to see if we could figure out how they disperse. We observed different nuts. The students guessed that animals probably eat the nuts. They said that they could not attach to an animal and they seemed too heavy to be carried off by the wind. We put them in a tub of water to see if they could travel by that type of seed dispersal. The students predicted that some would float and others would not based on their shape. They were surprised they all floated! After students learned all about how seeds disperse, they were given a letter from Farmer Joe (displayed below). Farmer Joe has a huge problem: weeds have invaded his garden! He has no idea how they got there. Plants don't move and he did not plant weeds seeds! Students write Farmer Joe and explain to him that seeds travel in different ways. (Note: Pokeweed is a poisonous plant. This weed adds more of a challenge for students!) Click here for the pdf that contains the letter: Investigating Seeds Students drew the 7 types of seed dispersal that we learned about. Then, they studied the images of the weeds (and their seeds) that invaded Farmer Joe's garden. Based on the seeds' physical attributes, the students determined what type of seed dispersal caused dandelions, cockleburs and pokeweed to grow in Farmer Joe's garden. Using the real world context of weed seeds dispersal caused dandelions, cockleburs and pokeweed to grow in Farmer Joe's garden. solving Farmer Joe's mystery when they investigated seed physical attributes. Looking at the observable properties of seeds gave them a better understanding of seed adaptations. Erin Bittman is a second-/third-grade student teacher in a multi-grade student teacher blog, E is for Explore! In order to get the highest possible yields from your garden, it can be helpful to go back to the fundamentals and take some time to really think through the process of growing plants from beginning to end. Growing your own means making sure that you understand the needs of your plants, and the environment in which they are grown. When you get things right, it can be a truly rewarding experience. But when growing at home, not everything will go according to plan. One area where things can often go wrong is during seed germination. Many new gardeners don't really take the time to consider what this process requires. So here are some simple tips to help you germinate seeds successfully, whether you are sowing them indoors, or directly into your garden. First of all, in order to achieve good germination rates, you can save your own seeds from heirloom or heritage crops. But if you are buying seeds, you always need to consider the source. Make sure you choose seeds from a reputable supplier. And, ideally, source seeds from as close to home as possible. Seeds lose viability over time, and if stored or transported incorrectly, can yield poor results. Make sure the seeds you choose are suitable for growing in your area, and in your particular garden. (Check with your local cooperative extension service for advice on what may be, or may not be, suitable for your area.) Once you have your seeds, remember that you too will have to store them correctly. Then you will have to germinate successfully. Even when the environmental conditions are not perfect, you can still get plants to grow. But boosting germination rates by optimizing conditions can increase the yields possible from your garden. Here are some important things to think about when trying to make sure conditions are ideal: Mature seeds typically need to rehydrate. process. As the seeds take in water, hydrolytic enzymes are activated. These begin to break down the food stored within the seed so that metabolic processes can take place. Water too little, and germination cannot take place. But water too much and this can also cause a range of issues. Water needs tie in with the next requirement - oxygen. Ensuring good rates of germination. Before seeds develop leaves, most of their energy comes from aerobic respiration. In other words, seeds need oxygen from their environment for metabolic processes to take place. When insufficient water is supplied, the coatings on some seeds may not be able to break down. Sometimes, this is necessary in order to allow seeds to take in water and oxygen from their environment. But overwatering can cause waterlogging and compaction. Which can mean that seeds are starved of the oxygen they need. In terms of oxygen needs, it is also important to make sure that seeds are buried to the right depth. If a seed is buried to the right depth. If a seed is buried to the surface of the soil.) Make sure to consult the seed package or information elsewhere to check how deep to sow and other requirements for the specific seeds you are planning to geminate. An important part of making sure that water and oxygen needs are met is choosing the right seed starting growing medium. The potting mix that you use for general purposes, or for mature plants in containers, will not necessarily be suitable for seed starting medium can either be soil-based or soil-less. But it will usually need to have a finer texture of the mix must remain moist, yet be free-draining enough to prevent waterlogging and compaction. Though if you are sowing seeds to pot on or transplant fairly quickly, it does not need to be particularly high in nutrients. To keep your gardening as sustainable and eco-friendly as possible, make sure you choose a peat-free option. Peat is a valuable carbon sink and its ecosystems are crucial in maintaining biodiversity and the world's water cycle. It cannot be naturally replenished as fast as gardeners are using it. So we should leave it where it is, protect those precious ecosystems, and use alternatives in our gardeners are using it. So we should leave it where it is, protect those precious ecosystems, and use alternatives in our gardeners are using it. So we should leave it where it is, protect those precious ecosystems, and use alternatives in our gardeners are using it. However, you can also make a soil-less mix to make sure you avoid issues with fungal diseases like "damping off," and weeds. Composted woody materials of construction of the basic environmental needs of your seeds in mind. As well as thinking about oxygen and water, and the growing medium that provides optimally for these needs, you also need to think about temperatures. Where and when you plant is crucial to make sure you provide the right temperatures for germination. Most common annual crops have a minimum germination temperature of roughly between 36 F and 60 F degrees, but also have optimal germinate best between 75 F and 90 F, tomatoes between 61 F and 86 F, and peppers between 64 F and 95 F degrees. When sowing indoors, heated propagators may be required for best results for warm-season crops, depending on the temperatures inside your home. When sowing outdoors in cooler climates, sowing too early can result in much lower germination rates. So these are very important things to think about if you want to achieve the best possible results. There is, of course, a lot more to learn about these basics will point you in the right direction for getting the best germination rates possible, and get your garden off to a good start this year.

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