**THE GARDEN  GAME**

**OVERVIEW**

This is a wonderful spring game to play outside in the garden with children prior to planting, as an introduction to the importance of **biodiversity** in the garden.

**BACKGROUND**

Students should have an understanding of the terms **crop** and **variety**. A bean is one type of food crop but there are thousands of different varieties of beans. Beans can be green, purple, long, thin, short, fat, speckled, etc. but they are still all beans. Children should also understand that every different bean variety has different **traits** or **characteristics**. In the case of beans, some have traits that allow them to do well in hot weather, others do well in cool weather, some in wet soil, some in dry soil etc. These can be compared to super powers!

Check out the *Glossary of Sow and Save Terms* for help explaining **biodiversity, crop, variety** and **traits/characteristics.**

**PREPARATION**

Print out all of the seed biodiversity cards, enough for each participant to get one. There are 30 in total. Cut up the squares and place them in a container.

Tell the students that there are six different bean varieties being planted in the garden today and they will each represent one of them. Every bean variety has different characteristics or traits that give it special super powers. Here are the names of the real bean varieties they will be playing:

Provider Beans

Tendergreen Beans

Rattlesnake Snap Beans

Blue Jay Beans

Golden Wax Beans

Black Valentine Beans

**PROCEDURE**

Pass the container around and have every child take one card. Tell them to keep the name of their bean variety and its special characteristic (or super power) a secret. Every year for the next three years all of these bean varieties will be planted in the garden. If you want, you can record the results of every year for visual effect. This could be done outside on chalk on the pavement, on a white board, or on paper by a teacher or student.

**The Leader’s Script:**

“*Congratulation beans! You have just been planted in the ground in the spring”*. Have all the beans curl up into a ball, then slowly stand up tall to emphasize that they are starting to grow…

**Year 1**

*“The spring started beautifully this year with warm, sunny weather so we ran outside to plant our garden. Unfortunately the week after it rained and rained and rained! More rain fell in one week than we usually get in a month! The gardens and fields were all soaked and waterlogged. On top of that it was freezing cold! We normally wear t-shirts and shorts to school in June but instead we were actually wearing pants and sweaters! With all of this wet weather there is a fungus, which is a kind of tiny mushroom, that is taking over our garden and killing off a lot of our young bean plants. It’s called a ‘fungal’ disease.*

*Now look at your card. If you hold a card that says:* ***Grows well in wet conditions*** *or* ***Grows well in cold temperatures*** *or* ***Is not killed by fungal diseases*** *then you are not bothered by the rain, the cold and the fungus. You can keep growing, so stretch out your hands!*

*Everyone else, you couldn’t handle all that rain, cold and fungal disease. That means you didn’t survive this year. Please sit down.*

At the end of Year 1, approximately ½ of the class should be standing. Of those that are still standing ask the students to call out the name of their bean variety. Record the survivors under Year 1 if you are keeping a chart.

*Everyone look around: those with hands raised have survived this spring and will continue to grow into mature bean plants over the summer. Luckily there are still beans standing, so we will have food this year!*

**Year 2**

*“Now a year has passed and all of you are getting planted into our garden once again. (Everyone curls up and pretends to grow).This year was very different from the first year. It was so hot and dry in the spring we were wearing shorts and t-shirts in April! The heat and dry conditions continued right through to June. We did our best to keep our bean seeds well watered but over the weekend the soil dried out a lot. When we got back to school we found that many of our plants had died.*

*If you have a card that says either:* ***Can survive dry weather*** *or* ***Grows well in hot temperatures*** *stretch out your hands. If your hands are raised you can stay standing. Everyone else please sit down because you have not survived this year’s harsh conditions.*

Approximately 1/3 of the class should be standing. Of those that are still standing ask the students to call out the name of their bean variety. Record the survivors under Year 2 if you are keeping a chart.

*Lucky for us, there are still a few beans left standing. There will be food at harvest.”*

**Year 3**

*“This year was perfect for our school garden. It was warm but not too hot, we had good rainfall and when it wasn’t rainy we remembered to water our gardens. Everything was growing beautifully and it was so nice to be outside and working in the garden with our class. But then, at the end of the school year, something mysterious happened and most of our beans looked awful! Our teacher said that our beans had something called mosaic virus. It’s like a bad flu for plants and when they get it, the small beans growing on the plant don’t look very healthy.*

Approximately 1/6th of the class should be standing. Of those that are still standing ask the students to call out the name of their bean variety. Record the survivors under Year 3 if you are keeping a chart.

*If you have a card that says:* ***Is not killed by viruses*** *then you are one of the lucky ones, and you can keep growing. Everyone else sit down, you were killed off by the virus. Wow, this year was a close call. Luckily we have some beans left standing, so we’ll still be able to eat beans this year.”*

**Who Survived?** Place a checkmark next to each surviving variety

|  |  |  |  |
| --- | --- | --- | --- |
| **Bean Variety** | **Year 1** | **Year 2** | **Year 3** |
| Provider Beans |  |  |  |
| Tendergreen Bean |  |  |  |
| Rattlesnake Snap Bean |  |  |  |
| Blue Jay Bean |  |  |  |
| Golden Wax Bean |  |  |  |
| Black Valentine Bean |  |  |  |

**REFLECTION**

Whichever varieties were still standing at the end of each year hold the key characteristics that allowed them to survive that year’s growing conditions. Students should understand that environmental conditions in gardens and farmer’s fields vary from year to year and having a diverse number and variety of crops creates a resilient garden that can help to avert catastrophic crop losses.

Here are some reflection questions to ask of the class.

* What did you notice about the varieties that were able to grow each year? *[They were different ones each year].*
* What would have happened if you had all played the same bean variety? Let’s say you were all Blue Jay Beans. *[Review each of the three years to see what would have happened.* *Everybody would have been ok the first year, but nobody would have survived years 2 and 3. We wouldn’t have had any beans to eat at harvest.]*
* How would you make sure that every year you have enough beans that survive in your garden? *[Plant a biodiverse garden with more than one variety so that changing conditions from year to year do not kill or weaken all plants]*
* Most people can only plant a few varieties of beans in their gardens; they just don’t have the space for more! How can we make sure that all of the seeds from all of these varieties (and more!) can be saved for the future? *[Encourage other people to grow different varieties than you. For example, see if your friends can plant other varieties and exchange seeds with them so everyone has some of each kind for next year. There are also local farmers and seed companies that make sure to save and preserve multiple varieties of seeds.]*
* Seed savers and seed farmers are important! People who have enough land to support the growth and saving of many different varieties safeguard a wide range of seed varieties that will help us withstand a variety of conditions in the garden. How can we support them? *[Encourage your family to buy food from local farmers who plant many varieties, even if the fruits or vegetables look a bit different than what you’re used to seeing at the grocery store. They look funny because they’re a different variety, and that’s good! Also if you have a garden at home, encourage your family to buy seeds from local companies that have multiple varieties of local seeds].*

**EXTENSION**

Discuss or engage students in supplementary research about the importance of agricultural biodiversity. A well known case study is the Irish Potato Famine. In the 1840’s when a fungal disease called ‘blight’ affected the Irish potato crop, the entire crop was destroyed. This led to the massive starvation, death and displacement of 2.5 million people. Students learning about the colonization of Canada and early pioneer life can make the connection between this blight and the large numbers of Irish immigrants who came to Canada as a result of the failed Irish potato harvest.

All Irish potatoes descend from a handful of potatoes brought to Europe from South America in the 1600’s. South American potato farmers grow hundreds of potato varieties, many of which are resistant to a variety of diseases. The Irish farmers only grew a few varieties in their fields, which left them vulnerable to disease or infestation. Had there been more varieties of potatoes in Irish fields when the blight hit, history could have been very different.

Another example is barley. In Ethiopia approximately 80 different varieties are regularly grown. In Canada we don’t grow that many. In the 1980’s Canadian barley was affected by a virus and barley crops were dying. A barley variety that was resistant to this disease was found in Ethiopia. This is why it’s incredibly important to grow and save varieties not just in Canada but around the world. We never know when we might need a new variety to help each other!