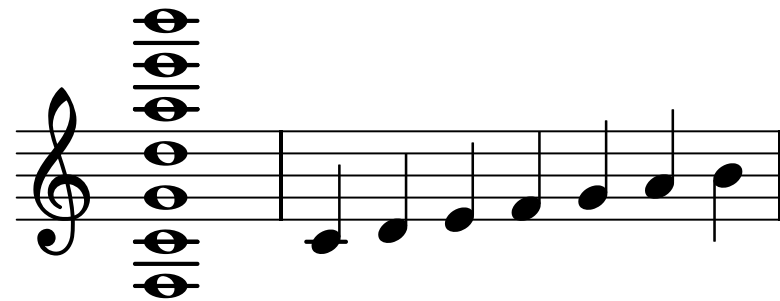# To Farm or Not to Farm

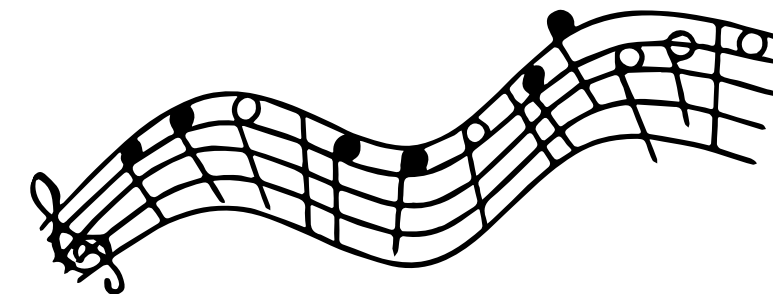**How can we use climate data to plan(t) for the future?**

Climate Variability vs Climate Change

Climate Variability

the natural processes that can cause periods of rainfall or drought

ex: the notes in a song

Climate Change

the man-made (anthropogenic) increase in global mean temperature
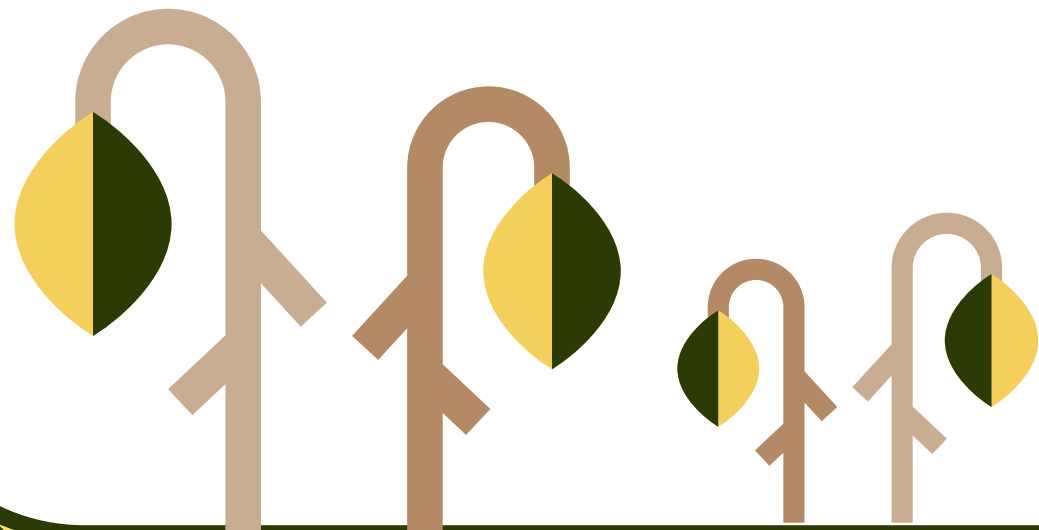
ex: the key change that makes all the notes higher or lower

What does climate change mean for farmers?

Certain places experience increased periods of drought while others experience extreme precipitation that causes flooding. Some places will experience both!
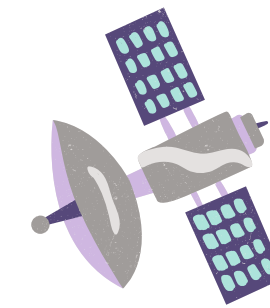
farmers will experience bad years more frequently as the climate changes

What can farmers do about it?

Index Insurance

Index insurance shrinks the risk of loss while providing opportunities for the farmers to do well each year, by using rainfall and satellite data around the world.

This helps farmers assess risk, make more money in the good years, and access insurance payouts in the bad years.

Let's Play:

You are going to step into the role of a farmer who is planning for the future!

Your goal is to have the highest yield (amount of sellable crops) at the end of the year.

Drought Years and Ok Years:

For the activity, there will be a hat or some sort of container, and four items. One of the four of the items should be **different** from the rest or be marked to differentiate it from the other three. For example, three blue markers and one red marker.

The three similar items will represent the **ok** years while the different item represents a **drought** year.
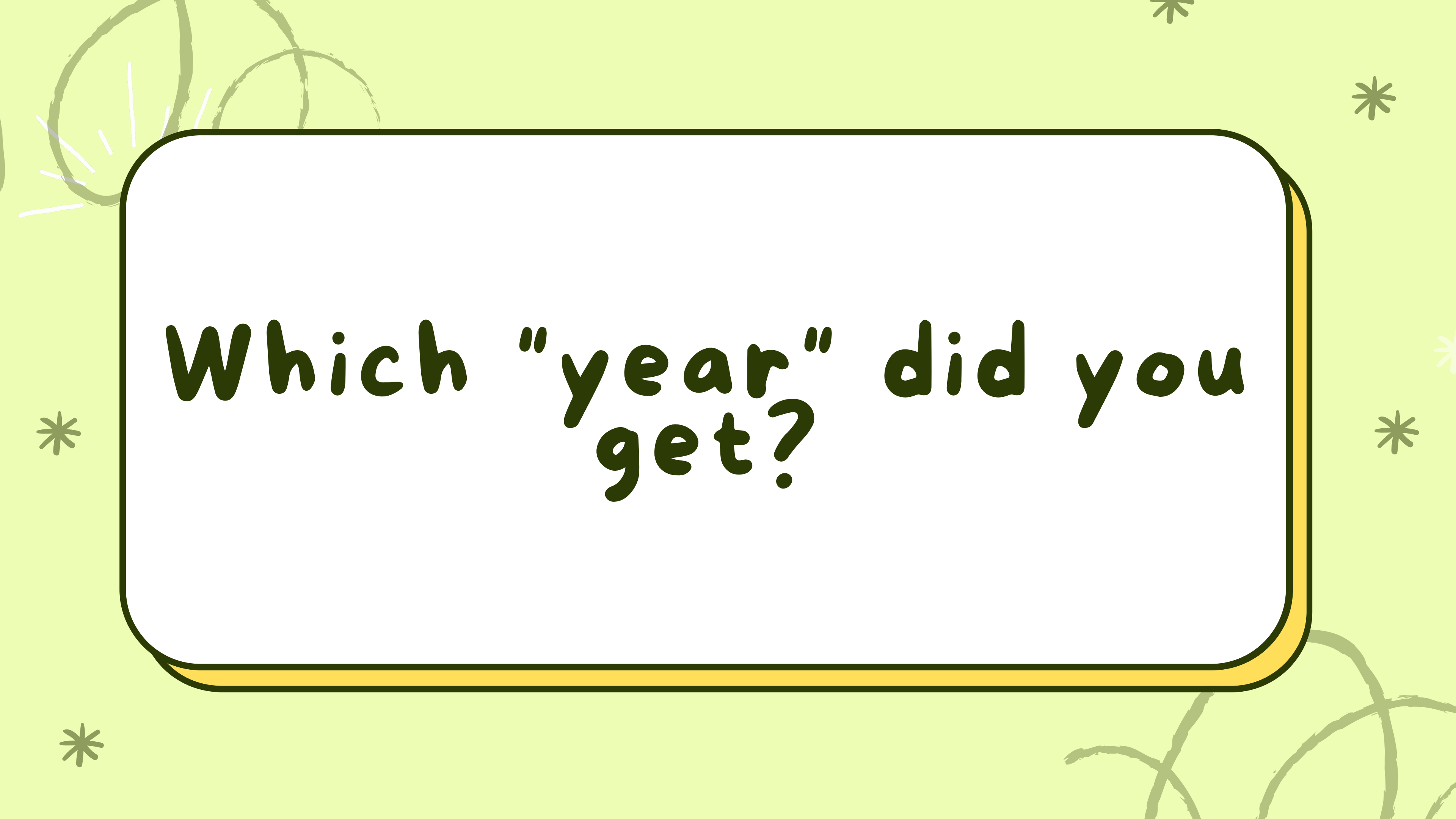
There is a 75% chance of having an **ok** year and a 25% chance of having a **drought** year.

Round 1

Pick an object from the container → The object will show if it is a drought year or an ok year

Which "year" did you get?

Round 1 Results

If you pick a drought year, you lose your farm

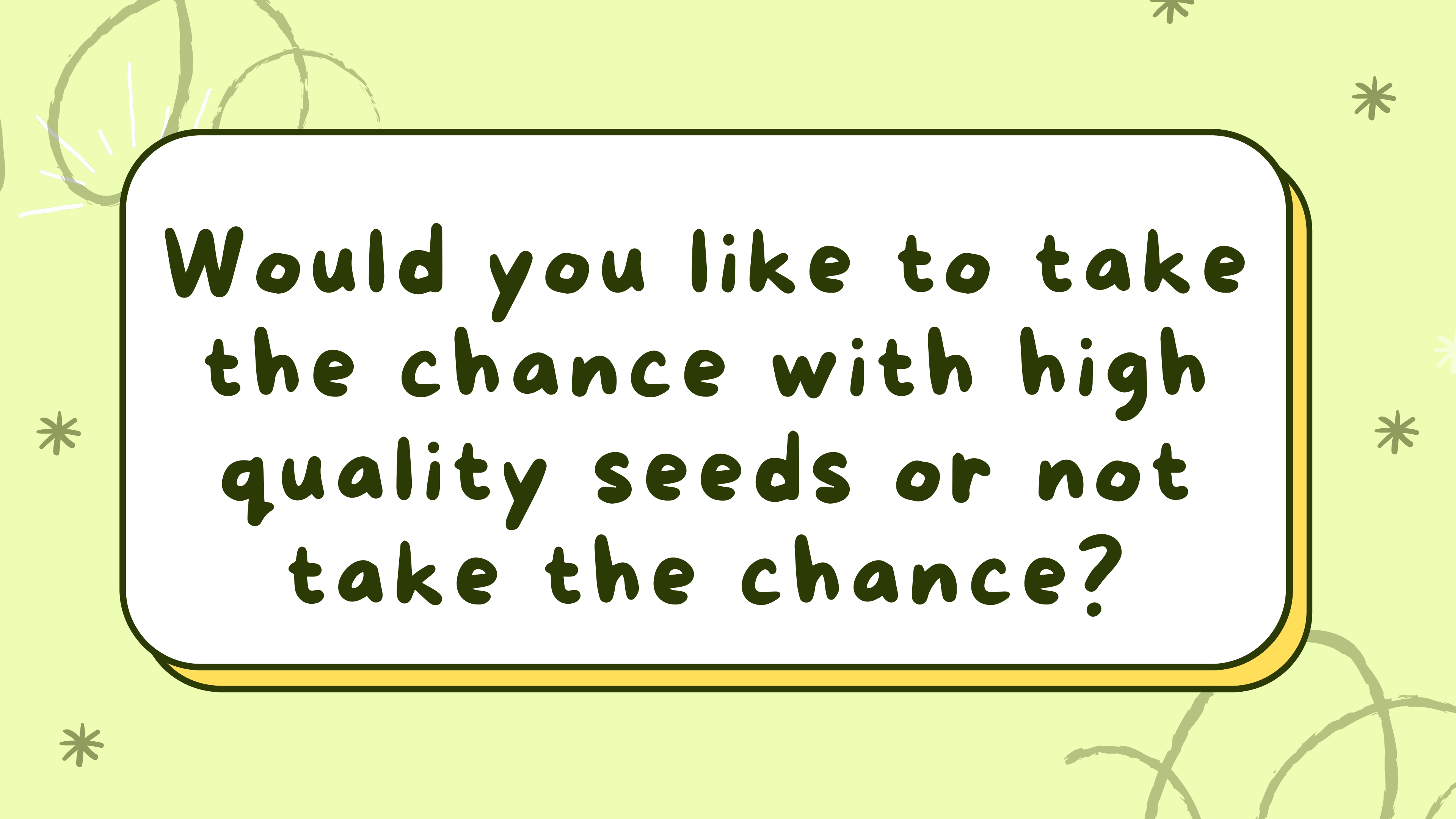If you lose your farm, you can come back in round 2

Play round one 3-5 times!

Round 2

Stick with normal seeds and get normal yield

Get more expensive high quality seeds and get twice the yield

Would you like to take the chance with high quality seeds or not take the chance?

Round 2

Pick an object from the container → The object will show if it is a drought year or an ok year

Round 2 Results

NORMAL SEEDS:
If you get a drought year, you don't lose your farm

HIGH QUALITY SEEDS:
If you have a drought year, you lose your farm

Play round two 3-5 times!

Round 3

Buy insurance for 25% of your earnings

Don't buy insurance

Do you want to pay the fee and buy insurance?

Round 3

Pick an object from the container → The object will show if it is a drought year or an ok year

Round 3 Results

Insurance

If you get a drought year, you don't lose your farm

No Insurance

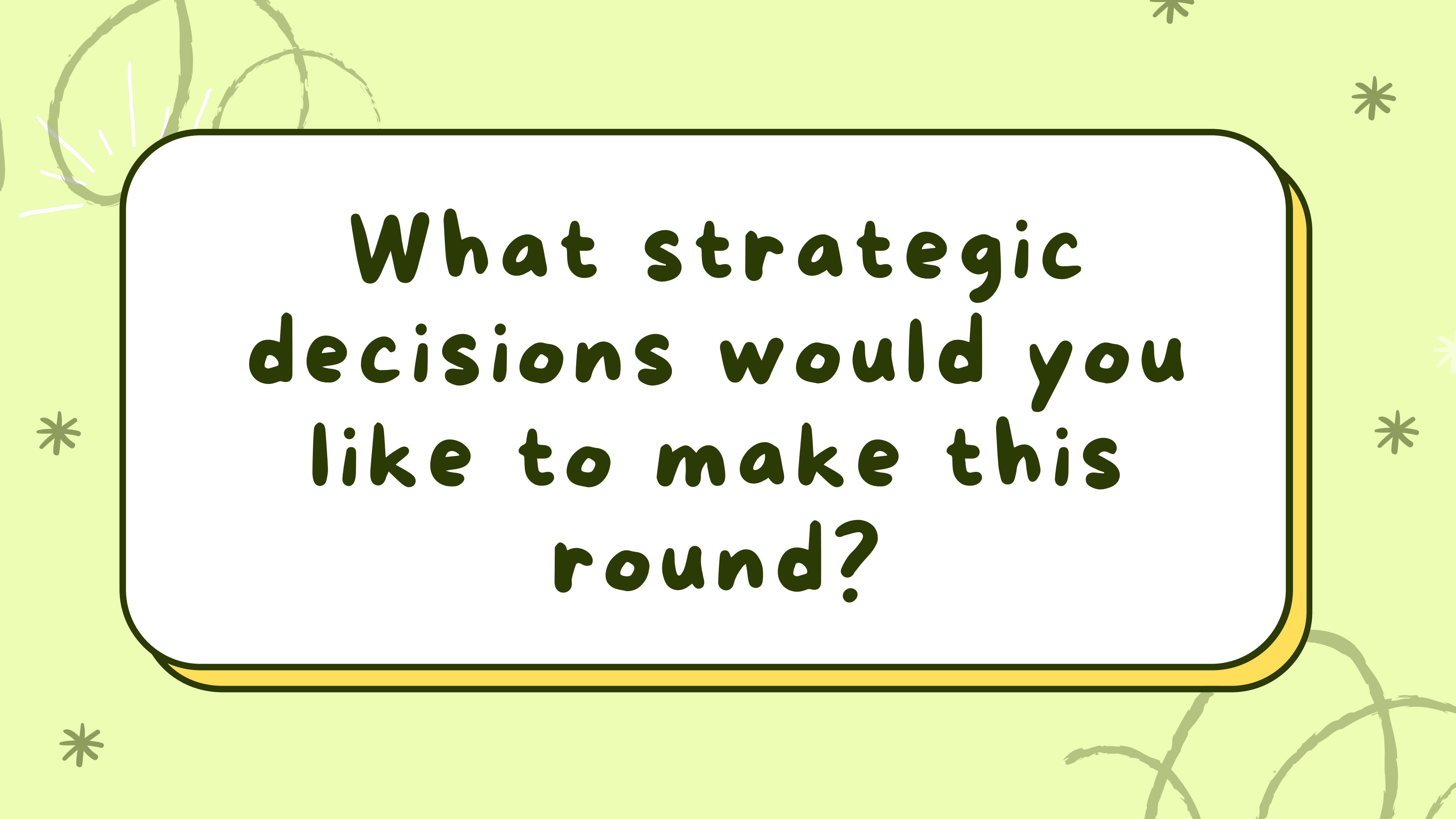If you get a drought year, you lose your farm

Play round three 3-5 times!

Round 4

Pick the quality of your seeds:
HIGH or LOW

Pick whether you want to buy insurance

What strategic decisions would you like to make this round?

Round 4

Pick an object from the container → The object will show if it is a drought year or an ok year

Round 4 Results: Ok year

Low quality seeds and insurance

You get a normal yield

Low quality seeds and no insurance

You get a normal yield

High quality seeds and insurance

You get twice the yield

High quality seeds and no insurance

You get twice the yield

Round 4 Results: Drought

Low quality seeds and insurance

If you get a drought year, you don't lose your farm

Low quality seeds and no insurance

If you get a drought year, you lose your farm

High quality seeds and insurance

If you get a drought year, you don't lose your farm

High quality seeds and no insurance

If you get a drought year, you lose your farm

Play round four 3-5 times!

Wrap Up

If you were a farmer, would you want to buy insurance? Why or why not?

Why may some farmers still be hesitant to buy insurance, even after this lesson?

Thank you!

For more information, please contact
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COLUMBIA CLIMATE SCHOOL
INTERNATIONAL RESEARCH INSTITUTE
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