What Are the Chances?

EAE Learning objectives for this lesson

Learn expressions for talking about probability, review modals of probability, practice listening

Activity One: Icebreaker

1. Are you an optimist or a pessimist?
2. Are you good at predicting what will happen?
3. Do you find it useful to think about the probability of things happening?
4. How do you express when you are certain of something?
5. Would you say you are a planner or a spontaneous person?
6. Does planning make you stressed?
7. Does being spontaneous make you nervous about what could happen?
8. Do you think certain things are impossible?

Activity Two: Sarah's Diary

Read the diary entries then answer the questions. Identify the expressions she uses to talk about probability.

Sunday - I'm going to a picnic next Saturday. I'll definitely see Joe – I'm so excited because I have a crush on him!
Monday - My best friend Lucy said she's going too. She's bound to speak to him first, and she's prettier than me, so Joe is way more likely to fancy her.
Tuesday - I don't have anything to wear… I doubt he will even notice me…
Wednesday - I expect there will be lots more interesting people he will want to talk to
Thursday - I heard there's going to be a different party on Saturday – Joe might go there instead!
Friday - There's a good chance that it will rain tomorrow, so the picnic will be a disaster!
Saturday - Today I woke up with a spot on my face – so I'm definitely not going!



1. Is Sarah optimistic or pessimistic? Why?
2. Who is Joe to Sarah?
3. What does Sarah think Lucy will do?
4. Do you think Sarah went to the picnic?
5. What helped her make the decision of whether to go?

Activity Three: Expressions Match-up

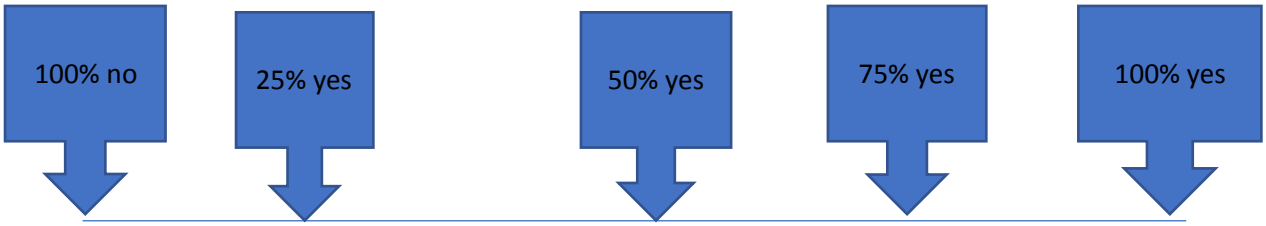
Here are some expressions we use to talk about probability:

definitely	certainly, for sure
bound to do something	someone is almost certain to do something
likely to do something	someone will probably do something
I doubt if... or I doubt that...	think it probably won't happen
expect something	think or believe something will happen
might	it's possible, it may happen
a good chance	more than 50% probability

A friend is taking a driving test next week. Will she pass? Match each sentence to the probability.

She's likely to pass / I expect she'll pass / She has a good chance of passing

She definitely won't pass
I doubt if she'll pass
She's bound to pass
She might pass
She'll definitely pass



Your turn!
What's something you expect to happen, in your opinion? What's something that you think is bound to happen? Make a sentence of your own for each expression.

Activity Four: Probability Tic-Tac-Toe

Use the grid to play Tic-Tac-Toe with your partner.
Choose a topic below, create a sentence (using the expressions we have just learned), and write X or O on the square – the first player to get 3 in a row wins!

aliens exist	WW3 will happen	I will stop eating chocolate
climate change will be reversed	people will drive flying cars in the year 3000	dinosaurs return
I will be rich	it will rain tomorrow	people will go to Mars

Activity Five: Reading Comprehension and discussion
Read the article below then answer the comprehension and discussion questions.

What has the search for extraterrestrial life actually yielded and how does it work? Astrophysicist, Swinburne University of Technology

There are three exciting ways we might detect life beyond Earth in the coming years.

1.Probes to planets and moons

The first is by sending probes to planets and moons in the Solar system. We already know there isn't any other intelligent life in the Solar system, but there could be simpler life like microbes. You may have heard about the NASA missions to Mars – the latest is the Curiosity Rover, and it has special equipment that might detect simple life like microbes on the red planet's surface.
Curiosity recently uncovered an intriguing mystery: occasionally its sensors pick up methane gas in the atmosphere. Methane is produced here on Earth by animals (in particular, cows and sheep), so finding methane could point to there being some microbes in the soil. That would be an amazing discovery, but it could still be something less interesting, like a chemical reaction between rocks.
Another upcoming mission is called Dragonfly, which will venture to Saturn's moon Titan (which, amazingly, has an atmosphere) and will fly around looking for signs of life.

2. Studying the atmospheres of other star systems.

The second way we might detect life is by looking closely at the atmospheres of planets in other star systems, which are called exoplanets. Astronomers have detected lots of exoplanets, and recently found water in the atmosphere of one exoplanet, but we still can't tell if there is life on the surface.
Excitingly, the next generation of optical telescopes will be able to detect gases in the atmospheres of nearby exoplanets. If we see that an exoplanet's atmosphere has a mix of gases like Earth, that would be strong evidence that we are sharing the galaxy with other beings.

3. The search for extraterrestrial intelligence or "SETI" as it is known, is the third way scientists are looking for life.

In SETI, we look for signals from space that look artificial or that don't seem natural. Detecting an artificial signal would tell us that there was not only life, but life capable of producing advanced technology. SETI could detect an artificial signal from much, much further away than the other two methods; the disadvantage is that intelligent life is almost certainly rarer. We just don't know yet how rare, and that's the reason we need to look.

The best explanation for why we haven't found life beyond Earth yet is simply that we haven't been looking hard and long enough, and our technology has not advanced enough. There are hundreds of billions of stars in the Milky Way alone, and there are more stars in the Universe than there are grains of sand here on Earth.

As SETI pioneer Jill Tarter is fond of saying:

You wouldn’t dip a glass in the ocean, come up with no fish inside and conclude, ‘No fish exist’.

The tide pools and coral reefs of the Universe may be filled with life, we just need to keep dipping our glasses into the darkness.

Comprehension and Discussion Questions:

1. How does Danny Price describe his job?
2. How many years will the Breakthrough Listen Program have been worked on by the time it's finished?
3. What does the word 'mind-bogglingly' mean?
4. What ways does he note are being used to detect life outside of Earth?
5. What has the Curiosity Rover found and where did it find it?
6. What is Dragonfly?
7. What do scientists hope they might find on exoplanets?
8. What do they look for in SETI?
9. What does Jill Tarter's saying mean?
10. Do you think there could be extraterrestrial life?
11. What are the chances that there is life outside earth?
12. What do you think are the chances that that life could be intelligent?
13. Can you find all the **modal verbs** in the article?



Activity Six: Modal verbs

We can use modal verbs to talk about possibilities

We use **may**, **might** and **could** to say that something is possible, but not certain
They may come by car. (= Maybe they will come by car.)
They might be at home. (= Maybe they are at home.)
If we don't hurry, we could be late. (= Maybe we will be late.)

If we keep looking, we might find extra-terrestrial life

We use can't or cannot to say that something is impossible:
That can't be true.
You cannot be serious.

We can’t be alone in the universe

We use must to show we are sure something is true and we have reasons for our belief:
It's getting dark. It must be quite late.
You haven’t eaten all day. You must be hungry.

He is a scientist. He must be very intelligent.

Fill the gaps with the correct modal verbs.

1. 'Did you know that Barry spends every weekend looking through his telescope?'
'Really? That _____healthy.'
2. 'What did you think about Alison's idea about aliens?'
'At first, I didn't agree. But now I think she _____ right.'
3. 'I'll see you in the science lab at noon tomorrow.'
'OK. I've got another SETI meeting at eleven, so I _____ a few minutes late.'
4. 'Mark's is really annoyed that he hasn't found any extra-terrestrial life yet.'
'Well, searching for aliens _____ really difficult.'
5. 'I think I'll go to bed now.'
'Of course. You _____tired after studying exoplanets all day.'
6. 'Do you know where David's from? I don't recognise his accent.'
'I'm not sure, but I think he _____from Mars!'

Activity Seven:Fill in the blanks then answer the questions that follow.
https://www.youtube.com/watch?v=7Sw9Fh6uk4Q **The Barenaked Ladies - 'Odds Are'**

Struck by lightning, sounds pretty frightening
But you know the _____ are so small
Stuck by a bee sting, nothing but a B-thing
Better chance you're _____ buy it at the mall
But it's a twenty-three four-to-one
That you can fall in love by the _____ of this song
So get up, get up
Tell the bookie _____ a bet on "not a damn thing will go wrong"

Chorus:
The odds are that we will _____ be alright
Odds are we gonna be alright, odds are we gonna be alright
_____
The odds are that we will probably be alright
Odds are we gonna be alright, odds are we gonna be alright for _____ night

Hit by the A-Train, crashed in an airplane
I _____ recommend either one
Killed by a Great White or a meteorite
I guess there ain't no way to go that's _____
But somewhere in the _____ someone is gonna fall in love by the end of this song
So get up, get up
No it's never gonna let up so you _____ as well sing along

(Chorus)

Sure things go _____, but I'll take my chances
Odds are long, so why not _____?

Struck by lightning, sounds pretty frightening
But you know the chances are so _____
Hit by the A-Train, crashed in an airplane
Better _____ you're gonna buy it at the mall
But it's a twenty-three four-to-one
That you can fall in _____ by the end of this song
So get up, get up
No I'm never gonna let up so you might as _____ sing along

1. What is the song about?
2. What do you think 'The odd are' means?
3. What do you think 'might as well' means?
4. What's your opinion of the message?



Activity Eight: Act it out!

Role play the following scenarios using the appropriate modals of probability

1. You are supposed to go on a camping trip over the weekend with a friend but you've just learned that the weather might be bad. Discuss with your friend about possibilities to deal with the weather or other plans to make as a back-up.
2. Your son has a performance at school and you are stuck working late. You call him to let him know how probable it is that you will either be late or not make it to his show.
3. Your boss asks you to hand in a report by end of day but you have a mountain of other work that also needs to be finished by then too. Use your negotiating skills to explain that it might not be possible and request to extend the deadline.
4. You are invited to a party that you really don't want to go to. Create excuses by talking about why you might not be able to come.



