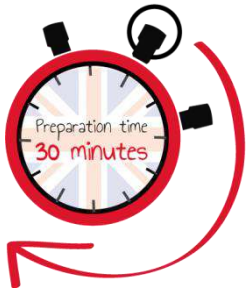
Lesson Plan © Easy Access English



Growing Meat

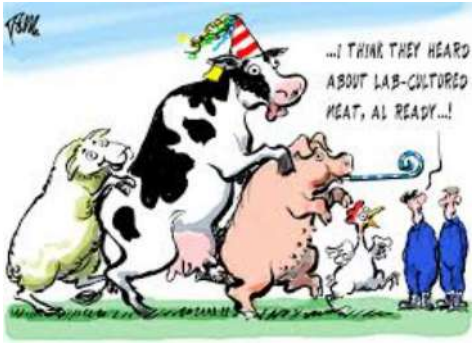
EAE Learning objectives for this lesson

Review and practice a variety of different future tenses. Comprehension activities.

Activity 1: **Q & A**

Thoughts about the future of meat.

1. What is the future going to hold for the production of meat?
2. Is there going to be a shortage of meat in the future?
3. What will the implications be of growing meat in a lab?
4. Will people be open to the idea of eating synthetic meat?



Activity 2: **Comprehension Text:**

Read the text and answer the questions

Source: http://www.sciencefocus.com/article/future/artificial-meat-factory

How good is a lab-grown burger?

Achieving a taste and texture that rivals real meat seems to be the easy bit. Following a comment from the critics who tasted his original burger and said it was a bit dry, Post has started to culture fat cells and tissue from cows, which add moisture when mixed in with the muscle fibres. He has also discovered that starving the cells of oxygen can increase the amount of flavour-giving proteins in the final product.

Marie Gibbons, a researcher from North Carolina State University working on cultured meat production, says there is no limit to what scientists could do with flavour. “There’s no doubt that [cultured products] can be manipulated to achieve good flavour – it’s just a case of what chemicals react with your taste buds,” she says. She thinks cultured meats could eventually be tastier than traditional meat, although she adds: “At the moment the priority is to produce edible protein on a large scale. Then you can work on flavour components.”

The first crop of cultured meat products will inevitably take the form of burgers, nuggets and other processed meats – unprocessed meat has a complex structure of bone, blood vessels, connective tissue and fat, and grows in specific shapes. Yet it should eventually be possible to grow complex tissue like this too, says Dr Paul Mozdziak, Gibbons’s colleague at North Carolina State University. He and scientists at various cellular agriculture organisations (such as New Harvest, SuperMeat and Future Meat) are keeping an eye on developments in regenerative medicine, the branch of biomedical science concerned with growing replacement organs and tissue for procedures such as skin grafts.

Regenerative medicine involves encouraging cells to grow on a scaffold so the resulting tissue mimics the precise layout of a living organ, with different types of cells in the right position, creating interconnecting, functional parts. However, the complexity of living tissue means that only relatively simple tissues like skin have been made with any success.
Still, a lab-grown pork chop or rack of ribs is perfectly feasible, says Mozdziak. “When the cultured meat and scaffolding worlds collide, then the industry will take off exponentially,” he says.
As well as animal parts for food, scientists could even grow organic items such as rhino horns in order to help prevent poaching.

Questions

1. What was the first problem with synthetically cultured meat?

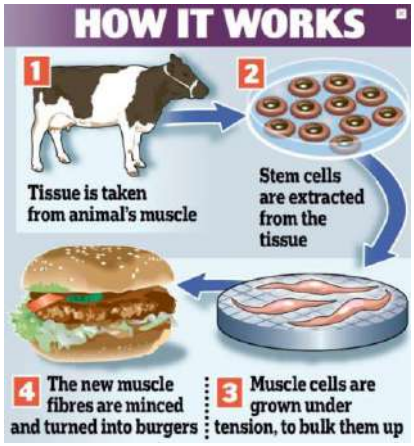
2. What have scientists started to do to combat this problem?

3. Why does Marie Gibbons say that in the future, lab-grown meat could be tastier than traditional meat?

4. Why will the first batch of synthetic meat be in the form of processed meat products?

5. How will they make synthetic meat in the form of ‘non-processed meat’, such as pork chops?

6. How are they going to help prevent poaching in the future?



Activity 3: Watch the video and answer the questions

https://www.youtube.com/watch?v=u468xY1T8fw

The meat of the future: how lab-grown meat is made

1. When was the first meat grown in a lab?

2. What does the process require less of?

3. What does traditional farming use 25% of?

4. What will lab grown meat be in the future in comparison with traditional meat?

5. What do they use to grow meat?

6. Does the procedure cause animal suffering?

7. What can one single cell grow into?

8. What are the differences between lab-grown burgers and regular burgers?

9. What will likely happen in the future regarding cost?

10. Would it be more practical for everybody to just become vegetarians, or vegans?

Activity 4: The Future Tenses

In English there are four future tenses although we predominantly use just one the "Future simple". Nonetheless let's have a look at all of the future tenses here today:

Future simple- Subject + "will" or "going to" + verb



I will go the shop tonight

It is used primarily for promises, offers and predictions

Promises- I won't (will not) tell anyone your password.

Offers- I will drive you home in my car

Predictions- Liverpool will be the champions of Europe soon.

Future continuous- Subject+ will+ be+verb+ing

I will be watching tv tonight when I finish work

We use future continuous to indicate when we will be in the middle of doing something in the future

Don't call me at 6 because I will be driving home from work

He'll be going to the cinema tonight at 8

Future perfect- Subject+ will+ have+ past participle

We use the future perfect for an action that will be completed between now and a future point.

I will have won a nobel prize before I am 50

By the time we will arrive at the cinema, the movie will have started.

Future perfect continuous- Subject+ will+have+been+verb+ing

We use the future perfect continuous for actions that have already started and will continue up to a certain point in the future

By the time I graduate next year, I will have been studying for 8 years

By 7pm I will have been working on this project for 5 hours

N.B.- By and "by the time" are commonly used with this tense



TEAM RACE – Fill in the blanks with the correct future tenses

1. We _____ (to have) dinner at a seaside restaurant on Sunday.
2. It _____(to snow) tomorrow evening.
3. Wait! I _____ (to drive) you to the station.
4. I _____ (to see) my mother in April.
5. Look at the clouds – it _____ (to rain) in a few minutes.
6. When they get married in March, they _____ (to be) together for six years.
7. You're carrying too much. I _____ (to open) the door for you.
8. Do you think the teacher _____ (to correct) our homework by Monday morning?
9. When I see you tomorrow, I _____ (show) you my new book.
10. After you take a nap, you _____ (to feel) a lot better
11. I'm sorry but you need to stay in the office until you _____ (to finish) your work.

12. I _____ (to buy) the cigarettes from the corner shop when it _____ (to open).
13. I _____ (to let) you know the second the builders _____ (to finish) decorating.
14. Before we _____ (to start) our lesson, we _____ (to have) a review.
15. We _____ (to wait) in the shelter until the bus comes.
16. I'm very sorry Dr. Jones _____ (not be) back in the clinic until 2pm.
17. This summer, I _____ (to live) in Brighton for four years.
18. I don't think you _____ (to have) any problems when you land in Boston.
19. The baby should be due soon, next week she _____ (to be) pregnant for nine months.
20. By the time we get home, they _____ (to play) football for 30 minutes.
21. By the time you get off the train, I _____ (to wait) for you for nearly 3 hours!
22. _____ (to take) your children with you to France?
23. This time next week I _____ (ski) in Switzerland!
24. Now I _____ (to check) my answers.
25. At 7pm tonight I_____ (to watch) the football match.



Activity 5: Watch the video and answer the questions

http://www.bbc.com/news/av/technology-40496863/lab-grown-meat-the-future-of-food

a. What do you think of this video?
b. What do you think is the future of food?
c. What are the advantages and disadvantages of synthetically created food?
d. Overall do you think this is a positive for mankind?
e. The young scientist mentions that the biggest problem for his company is 'public perception,' do you think that this will be too big a challenge to overcome?

Activity 6: Presentation role-play

You are the marketing team for a company which produces synthetically grown burgers. You are going to make a 'marketing pitch' to big companies in order to receive funding.
In groups prepare a presentation in which you try to convince the companies of the benefits and potential of synthetically grown meat.



Activity 7: Predicting the future

Using the four different future tenses from *Activity 4* make predictions about one of your colleagues who is in the lesson with you today. The others have to guess who you are talking about.

Then in partners, try to make predictions with a variety of future tenses about the future of cultured meat.

