

# Meet a STEM Professional - Active reading and listening tasks





# ANASTASIA VASILEIOU

RESEARCH FELLOW IN  
ADVANCED NUCLEAR  
MANUFACTURING

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## KEYWORDS

Manufacturing  
Materials

## ABOUT THE TASK

This is an active listening and reading task, that uses the SEEC model to develop understanding of key words. It is designed to inspire pupils to develop questions to ask Anastasia about her career journey to becoming a STEM professional.

## ENGAGE



Ask the pupils read the profile in full.

Then read again together identifying any broad themes or comments

Use the SEEC model to develop understanding of key words, and to encourage the pupils to develop questions to ask Anastasia about her career journey to becoming a STEM professional.

SEEC = select, explain, explore, consolidate

# ABOUT ANASTASIA - SUMMARY

- Anastasia's job involves working in a laboratory and using computers for simulations to replicate the use of materials in everyday life
- Anastasia enjoyed lots of subjects at school including music, dance and sports. She was good at Maths and English as well as science and found it hard to choose a career path.
- Settling on engineering, Anastasia studied mechanical engineering at University then a PhD in metal casting and materials science.
- Anastasia joined University of Manchester a few years ago and the projects she is involved with have enabled her to travel to countries such as Australia, Canada and France.
- Anastasia would love to work out how to join two pieces of metal together by welding but ensure the join is safe for years to come

**MANCHESTER**  
1824  
The University of Manchester

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**KEYWORDS**  
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**ABOUT ANASTASIA**

**HER JOURNEY INTO STEM**  
As a child, Anastasia found herself involved in a range of extracurricular activities, including studying music and practicing dance and sports. At school, she was good at Maths, Science but also, Literature and found it hard to choose a career path, but finally got attracted by the idea of studying engineering.

While studying Mechanical Engineering at university, Anastasia's work included designing the gearbox of a car, calculating the flow on turbomachines and programming robots. She then completed a PhD on metal casting and materials science.

A few years ago, she joined The University of Manchester to work on a number of exciting projects. So far, Anastasia has travelled to Australia, Canada, France, the Netherlands, Germany, Greece and around the UK to work with other scientists.

**HER JOB**  
In day-to-day life, I am working in a laboratory, participating in experiments. I also use powerful computers for simulations. I am working with a large team of excellent scientists and lovely people. I often travel to visit construction sites, factories, scientific facilities and institutions around the globe.

**HER HOBBIES**  
Anastasia enjoys playing the piano, photography and is learning to solve Rubik's Cubes!

**THE QUESTION ANASTASIA WANTS TO ANSWER IS...**  
How to join two pieces of metal together through welding but avoid or reduce distortions and defects - to make sure the join is safe for years to come.

**ANASTASIA'S QUESTION FOR YOU...**  
Have you observed any objects distorting due to heating in everyday life?

Keyword  
manufacturing

# ACTIVE LISTENING

Access the Collins CoBuild dictionary to help with pronunciation, definitions and synonyms. Visit [www.collinsdictionary.com/](http://www.collinsdictionary.com/)

## 1. SELECT

Anastasia describes her job as a research fellow advanced nuclear **manufacturing**

The keywords words are likely to affect the pupil's understanding and engagement with Anastasia's profile. The terms may not be part of the prior knowledge.

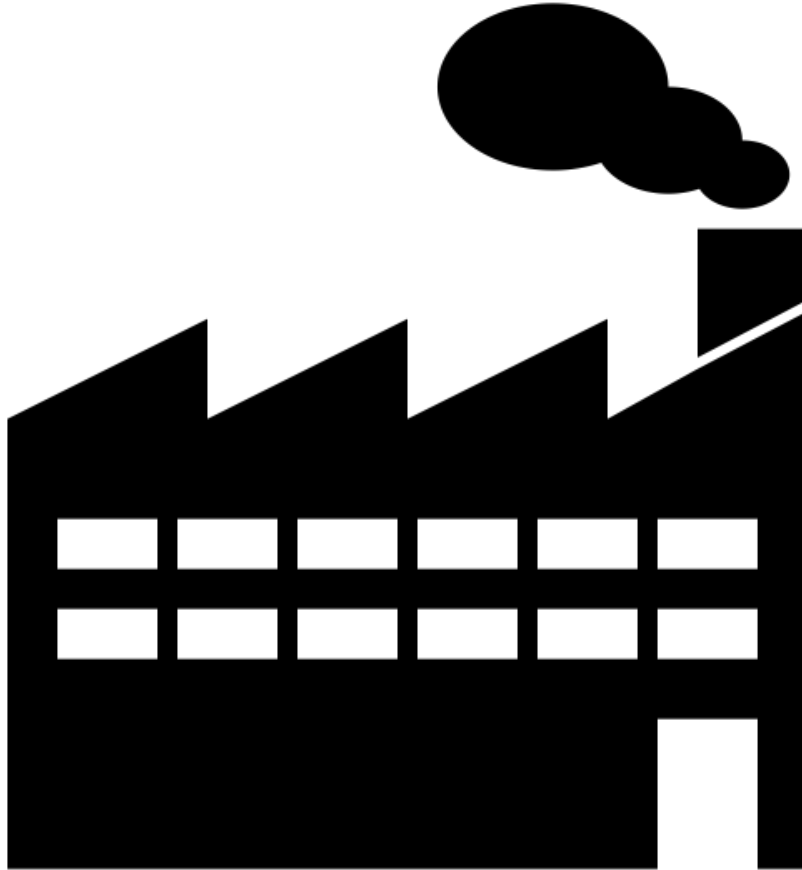
Focus on unpicking these words carefully.

Pupils may also be interested to know that **Nuclear** describes link to the central part of an atom, the nucleus. The energy released when an atom is split (nuclear fission) is a controversial source of renewable energy

## 2. EXPLAIN

- **Say** – Tell the pupils to repeat the words carefully pronouncing all the syllables
- **Write** - Ask the pupils to write the words checking their spelling is correct
- **Definition** – Explain that manufacturing is the business of making things in factories. To process or make goods on a large scale using machinery
- **Ask** – Invite the pupils to give examples of using these words which will support them to clarify meanings and allow you to identify any misconceptions or misunderstandings

# Manufacturing



Created by AA  
from Noun Project

[www.thenounproject.com](http://www.thenounproject.com)

### 3. EXPLORE

Etymology is finding out about where the word comes from. In this part of the task, pupils explore the etymology of the keywords.

**Manufacturing** (*noun*) meaning the process of making goods on a large scale, usually in a factory using machinery.

E.g. Our factory in Manchester is **manufacturing** the first four models of the new design

Synonyms for **manufacturing** include:

- Make
- Build
- Produce
- Construct
- Form
- Assemble
- Compose

From the root word **manufacture** (verb) to make something on a large scale

Explore further examples and questions from the pupils relating to the keywords.

**Images** could be shown or drawn that link with the word.



## 4. CONSOLIDATE

- **Test and learn** – revisit the keywords at regular intervals until you are sure there is a depth of understanding. Use some of the ideas already tried in other sections of the SEEC model as a quick quiz or reminder.
- **Research and record** – find out more about these words – what else can you find out about or is connected to the word manufacturing



- Read Anastasia's profile once more
- Ask the pupils to explain in their own words what Anastasia does. Ask them to explain what they understand about by the meaning of the keyword – **manufacturing**?
- **Using the keyword in the world** – ask the pupils to use the words **manufacturing** to produce questions for Anastasia.

Use the [Question Maker](#) to support this task.

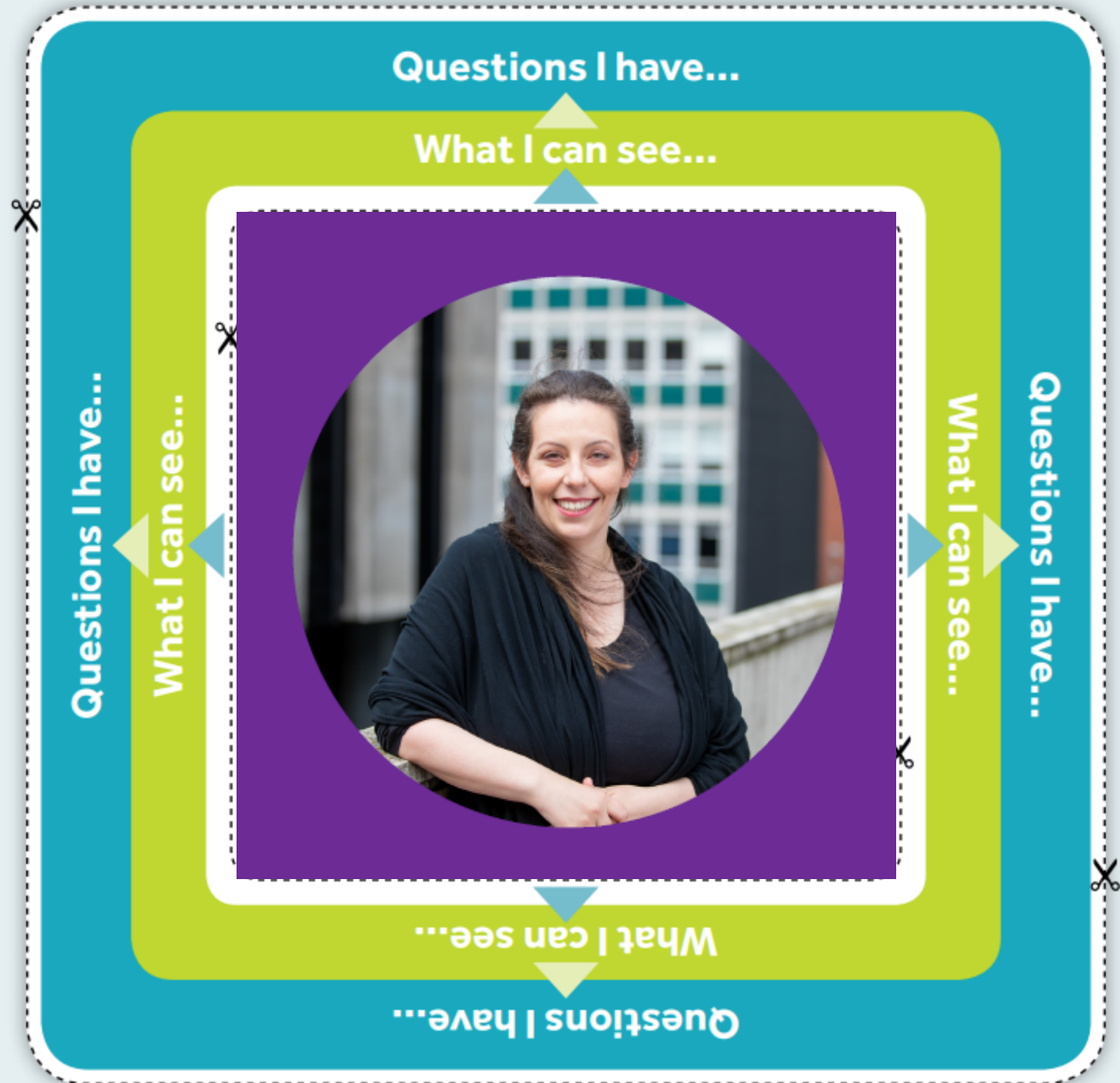
# Question Frame

## What you need?

A pair of scissors, a pencil, an object that you're curious about, sticky labels (optional).

## How does it work?

- 1 Make a frame out of an old cardboard box or use the printable. Be careful when cutting out the window in the centre.
- 2 Place the frame over an object or image, so that it appears in the window.
- 3 Observe what it looks like and describe what you can see.
- 4 Now, think about questions you have and jot them on a sticky note around the side of the frames.
- 5 Select the question(s) you wish to share.





## 5. COLLATE Questions for Anastasia

First name	Gender	Age	Question

Email at least 10 questions **together with** up to 10 photos of the pupil's work using the Question Maker to [fascinate@manchester.ac.uk](mailto:fascinate@manchester.ac.uk).

We will aim to get answers to as many as possible using a pre-recorded film with Anastasia or as a live Question & Answer session.