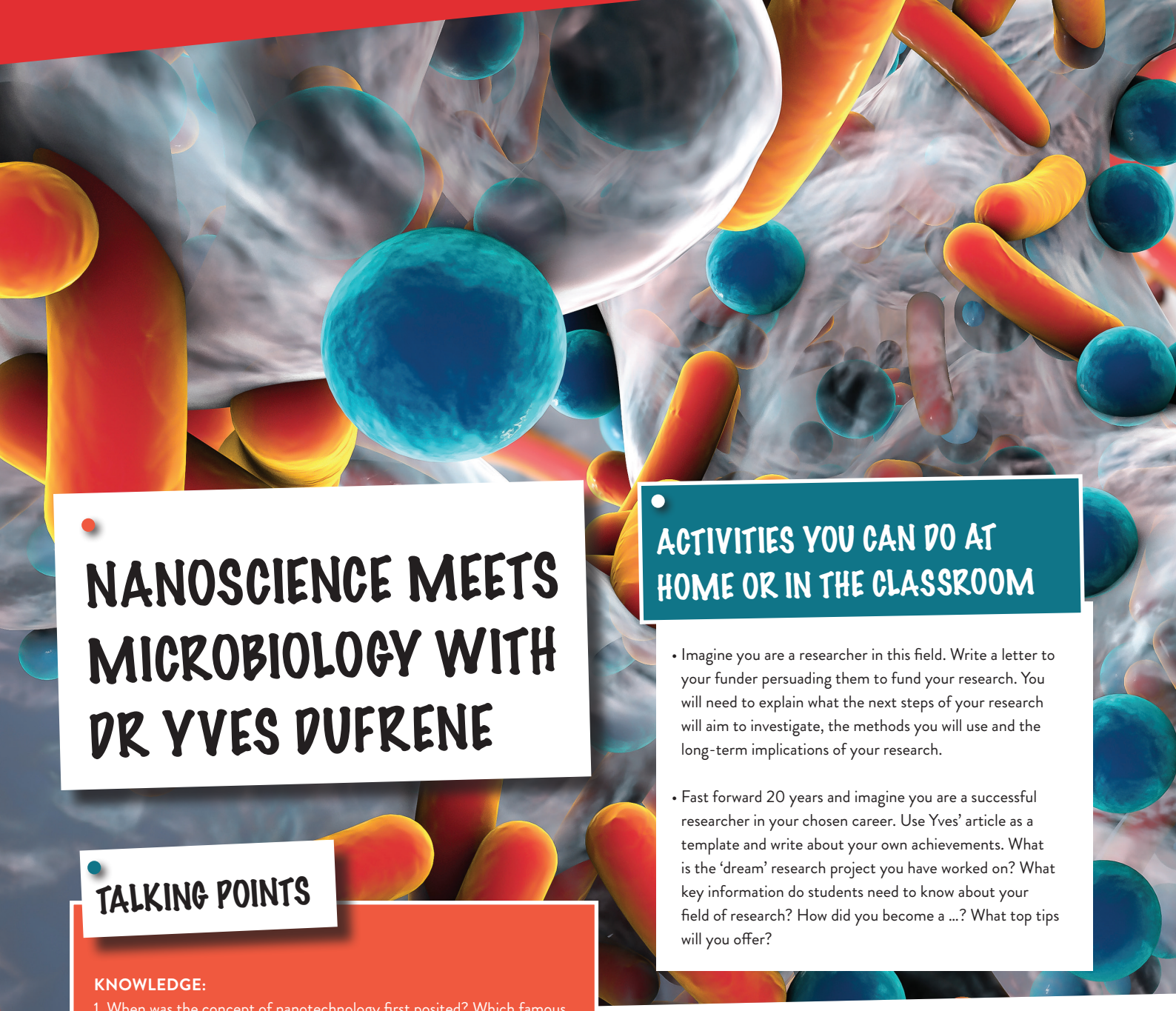

NANOSCIENCE MEETS MICROBIOLOGY WITH DR YVES DUFRENE

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

- Imagine you are a researcher in this field. Write a letter to your funder persuading them to fund your research. You will need to explain what the next steps of your research will aim to investigate, the methods you will use and the long-term implications of your research.

- Fast forward 20 years and imagine you are a successful researcher in your chosen career. Use Yves' article as a template and write about your own achievements. What is the 'dream' research project you have worked on? What key information do students need to know about your field of research? How did you become a ...? What top tips will you offer?

TALKING POINTS

KNOWLEDGE:

1. When was the concept of nanotechnology first posited? Which famous physicist was the first to suggest the concept?
2. Who coined the phrase 'nano-technology'? When was the term coined?

COMPREHENSION:

3. Which properties make methicillin-resistant *Staphylococcus aureus* (MRSA) strains of bacteria of particular concern to scientists?

APPLICATION:

4. What are the possible benefits from Yves' research? In what ways is he trying to stop MRSA from having adhesive properties?

ANALYSIS:

5. Why is it important for scientists to work on thwarting some bacteria more than others? Can you explain what it means for all of us if no more antibiotics are discovered?

EVALUATION:

6. Yves' field makes brilliant use of combining two fields that are seemingly unrelated. Can you think of other branches of science that currently come together? What about other fields that could benefit from taking learnings from others? What does it mean for science in general if we begin to look at the entirety of it as working towards the same goal?

MORE RESOURCES

NANO IMAGES

Want to see some images of extremely small things magnified? Of course you do!
https://www.nanowerk.com/nanotechnology/introduction/introduction_to_nanotechnology_31.php

BACTERIA IN THE CAFETERIA

Microbes live everywhere. Here is a game where you work to identify microbes and then kill them – but only the ones that are harmful!
https://www.amnh.org/explore/ology/microbiology/bacteria-in-the-cafeteria-game

YVES' WEBSITE:

Read articles that Yves has written about his fascinating work: **https://uclouvain.be/en/research-institutes/libst/yves-dufrene.html**