Warm up

Read the sentences and decide which colour can complete all three of the idioms.

1. We boarded the plane and set off into the wild ____ yonder, not knowing what our fate would be.
2. No one even knew that they were in a relationship. When we found out that they were getting married, it was a real bolt from the ____!
3. I’m not very close to my family. We only get together once in a ____ moon.

What do the idioms mean?

Think of three things which are never or very rarely this colour.
Watch for main idea

You are going to watch a video called, "Why You Never See Brilliant Blue Fireworks." Work in A/B pairs. While you watch, listen for the answers to your three questions, A or B. Then share the information with your partner.

Student A

1. Which colours are the easiest to achieve in fireworks? The most difficult?
2. If temperatures are too hot, what effect does this have on the firework colours?
3. Do the experts think that there will be a blue firework in the future?

Student B

1. In what order do these three things interact in a firework: colour, fuel and fuse?
2. If toxic arsenic is used in fireworks, who is in danger?
3. What other new developments in fireworks might we see in the future?

Is any of this information surprising to you?

Watch for detail

Read the sentences from the report and remember/predict the missing words. The words you write will have the same or similar meaning as the words in bold. The first letters of the missing words have been given. Watch the report again to check.

1. P_____________ (people who work with fireworks professionally) have tried to produce blue fireworks for centuries, and they have yet to succeed.
2. Why is blue so e_____________ (difficult to find or achieve)?
3. You see, to make fireworks, you need four basic components: fuel (usually gunpowder), a c_____________ (a chemical that consists of two or more elements) that produces colour, a fuse, and glue to hold it all together.
4. That explosion heats up those colour-producing compounds, causing them to g_____________ (produce a continuous light).
5. But some molecules are h_____________ (strong enough to survive or exist in extreme conditions - comparative form) than others.
6. Strontium chloride, the compound used to make red fireworks, can w_____________ (be strong enough to resist change under specific difficult conditions) at least 1,500 degrees Fahrenheit.
7. But to make a blue firework, you need copper chloride, which is much more f_____________ (easily broken or damaged).
8. As soon as it gets hot enough to b_____________ (burn strongly and brightly) blue, at least 1,000 degrees Fahrenheit, it starts to break down.
9. Arsenic, for example, has been used in some old fireworks f_____________ (particular combinations of substances, like a recipe)...
10. There’s some r_____________ (of a good enough standard to be considered acceptable) pale blues that are used more in special effects...
Now answer these questions:

1. Which two words are opposites?
2. Which two words relate to mixing things together to make a product?
3. Which two words relate to fire and light?
4. What other meaning of the word respectable do you know?

Optional extension - language in context

Work out the meanings of these common expressions in bold from the video, using the context to help you.

1. Pyrotechnicians have tried to produce blue fireworks for centuries, and they have yet to succeed.
2. To be fair, we've gotten close-ish (to creating blue fireworks).
3. ...there's still plenty to get excited about on the horizon, like fireworks that burst into different shapes and patterns, even letters.

Comprehension

John Conkling, the pyrotechnics expert from the video, says that achieving a blue firework would be "a delicate balance." Can you explain what he means in 35 words or less?

Final activity

Choose one of these options: a product development task or a discussion about issues related to fireworks.

Activity 1: Discussion

Discuss these questions in pairs or small groups.

1. How would the development of blue fireworks improve people's experiences of fireworks displays in your country? What about the development of fireworks which form letters or shapes?
2. Do you think it's better to watch big professional displays of fireworks or to stage small displays at home? Why?
3. Is it worth watching fireworks displays on TV?
4. Do you think it should be illegal for ordinary people to buy fireworks? Why?
5. Some people say that fireworks displays should be banned. What do you think their arguments might be?
Activity 2: Product development

Work in pairs or small groups to develop a new product: a brilliant blue firework. You need to decide:

1. What type of firework is it? Use your dictionary to check these words if you need to - a sparkler, a rocket, a fountain, a Catherine wheel.
2. Is your new firework for domestic use or for large public displays?
3. When and where might it be used?
4. How does the blue colour improve/enhance the firework display? Does it have any special significance or communicate any special meaning?
5. What is the name of the product? Use your imagination - you can see some examples of names in the header image at the beginning of the lesson.

Present your ideas to your classmates.