

# Science Challenge

issue 1



## Level 1

1. What is the nitrogenous base that occurs in RNA but not in DNA?

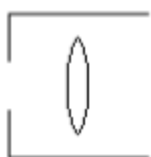
- a) Guanine
- b) Thymine
- c) Alanine
- d) Uracil

2. How many brains does an octopus have?

- a) 5
- b) 10
- c) 9
- d) 1

3. A beam of light is incident on a rectangular opening in the front of a box, as shown in the side view above. The back of the box is open. After passing through the box, the light is incident on a screen. The following devices may be in the box, positioned as shown. Which device could produce a tiny spot of light on the screen?

A convex lens



A concave lens



An opaque card with a very narrow slit



A prism with vertex pointing down



A thick sheet of glass



4. Which chemical element gives the blood of lobsters a bluish tint?

- a) Copper
- b) Cobalt
- c) Chlorine
- d) Manganese

## Level 2

5. Which is weakly acidic?

0.1 M  $\text{HC}_2\text{H}_3\text{O}_2$

0.1 M  $\text{CH}_3\text{OH}$

0.1 M KOH

0.1 M NaCl

0.1 M HCl

6. Which combination(s) will dissolve?

- a) Polar solute in polar solvent
- b) Polar solute in non-polar solvent
- c) Non-polar solute in polar solvent
- d) Non-polar solute in non-polar solvent

## Level 3

7. Which of these represents the change in plant types inhabiting an area over time, resulting in a climax community?

- a) Succession
- b) Dispersion
- c) Speciation
- d) Mutation

8. Which has more calories, table sugar or table salt?

- a) Table sugar
- b) Aspartame
- c) Around the same