ACTIVITY TWO

Timing 45 min.

- THE NECESSARY CONDITIONS FOR THE GROWTH OF MICROBES

Materials:

- dry, uncooked rice
- cooked (boiled and drained) rice
- cotton wool
- refrigerator
- sticky labels
- test tubes or boiling tubes

- **Method**
- 1. Label four tubes A - D.
- 2. Place some uncooked rice in tube A.
- 3. Place some cooked rice in tubes B, C and D.
- 4. Place enough cooking oil in tube D to just cover the rice.
- 5. Put a cotton wool bung in each tube.
- 6. Put tube C in a refrigerator.
- 7. Leave the other tubes at room temperature.
- 8. Check the tubes after 1 week and 2 weeks.

- **Results**
- Look for the growth of mould in the tubes. Decide what the conditions were like in each tube during the experiment.

Fill in the table below:

	CONDITIONS IN THE TUBE	APPEARANCE AFTER 1 WEEK	APPEARANCE AFTER 2 WEEKS
UNCOOKED RICE	no water, warm, air present	rice looks the same	
COOKED RICE ALONE	water present, warm, air present		
COOKED RICE IN REFRIGERATOR	water present, cold, air present		
COOKED RICE WITH OIL	water present, warm, layer of oil stops air reaching rice		

- **Prepare a scientific report:**
- 1. What conditions are needed for microorganisms to grow?
- 2. What are the two systems that avoided microbe growth?
- 3. If mold has grown in any of the tubes, where has the mold come from?
- 4. Which system is the most efficient at preventing mold growth?
- 5. If you were to sell cooked packed rice, would you use these preservation systems or can you think of any other preservation system that might be more suitable? Explain why you have chosen that preservation system.