UKS2 – Lesson Plan 1 – **Science**

How does our body respond to exercise?

Aim:	Key Words:	Preparation:
To explore how physical activity affects the human body by measuring and observing changes such as heart rate, breathing, and temperature during different exercises.	• pulse, heart rate, respiration, circulation, oxygen, stamina, recovery, muscles, lungs, temperature X	• Stopwatches or timers • Thermometers (ear/forehead strips or digital if available) • Pulse oximeters (optional but useful) • Clipboards, pens, and recording sheets • Cones or equipment for a basic circuit (e.g. star jumps, shuttle runs, lunges, skipping) • Water and towels (optional, for realism)

Prior Learning: Children should already have basic knowledge of the circulatory system and how the heart and lungs work to support the body. They should be confident with measuring pulse and making simple scientific observations.

WC / PT	Warm-up: **"What's Happening Inside?"** Lead a light warm-up while asking children to describe how they feel before exercise (e.g. calm, breathing steady). Introduce the idea that they'll be *detectives* investigating their own bodies!	0-5 mins
WC	Main Teach: 1. Brief recap of the heart, lungs, and blood circulation – include diagrams or models if available. 2. Introduce vocabulary: pulse, stamina, recovery time. 3. Demonstrate how to take your pulse at wrist or neck. Practise counting beats for 15 seconds and multiplying by 4 to get BPM (beats per minute). 4. Pose the key scientific enquiry: What happens to your heart rate and breathing when you exercise?	5-10 mins

I / S	Activity: **Exercise & Observe: Human Biology in Action** Children take part in a mini fitness circuit (4–5 stations: e.g. jumping jacks, skipping, squats, high knees, shuttle runs). After each station: • Measure and record **heart rate** • Note changes in **breathing**, **sweating**, and **body temperature** • Reflect on how they feel (tired, energised, warm, out of breath) Repeat the circuit twice to observe changes in stamina and recovery. Record all data using tables or a line graph if time allows.	10-30 mins
I	Extension Challenge: Ask children to **compare their data** to a classmate's and draw conclusions (e.g. "Did everyone's heart rate increase the same?"). They can also write a **mini scientific conclusion**: *"Exercise causes the heart to beat faster because…"*	30-35 mins
WC	Plenary: In pairs or as a group, discuss: • What surprised you about how your body responded? • Why do athletes train regularly? • How can we use this knowledge to keep our bodies healthy?	35-40 mins

WC – Whole Class PT – Partner Talk I – Independent S - Support

Challenge A	**Heart Rate Data Tracker** Children use stopwatches to record their **resting heart rate**, then again after each activity. They create a **line graph or bar chart** to show how different exercises affected their heart rate. Discuss which activities raised it the most and why.
Challenge B	**Calculate Your Heartbeat** Challenge children to calculate: • How many times their heart would beat in one hour at their active rate • How this compares to their resting rate They could then present this in a short written explanation or on a poster using numbers and diagrams.