



NUCLEAR  
WILD FOREST  
SCHOOLS

# WILD FOREST

## KS3 LEARNING RESOURCES

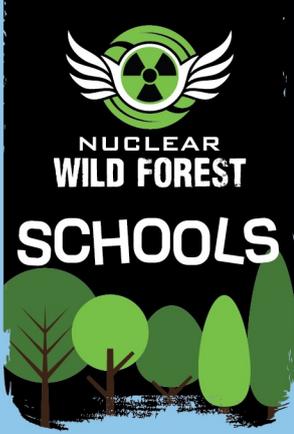
### MUDDY OBSTACLE CHALLENGE



LOtC Quality Badge







NAME :

# MUDDY OBSTACLE CHALLENGE

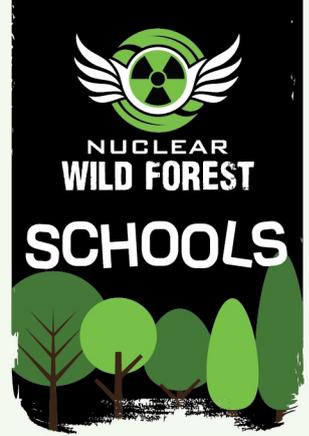
Have a think about what changes when you add forces to mud.

## 3: THE MUDDY RESISTANCE

Moving through water or thick mud is much harder than running on grass.

### The Task:

Draw a force diagram (*arrows*) of a person wading through a waist-deep mud pit. Label the forces acting against them (*Drag/Air Resistance/Water Resistance*) and the force moving them forward (*Thrust*). Why does "viscosity" make this harder?



# TEACHER NOTES

## ACTIVITY 1: FRICTION VS. TRACTION

Expected Answer: Football boots with studs.  
Scientific Explanation: Studs provide high traction by increasing the surface area's "grip" into the soft mud. Flat trainers have low friction on wet surfaces because a layer of liquid (mud/water) acts as a lubricant, reducing contact between the shoe and the ramp. Studs penetrate this layer to reach the solid surface or "lock" into the mud.

**Curriculum Link: Physics: Forces – Opposing forces and friction.**

## ACTIVITY 3: FUELLING THE MACHINE

- Complex Carbohydrates: Oats, brown pasta, wholemeal bread, sweet potatoes. (These provide slow-release energy).
- Proteins: Chicken, eggs, beans, nuts, fish. (These are for muscle repair and growth).
- The Process: \* Glucose (from carbs) + Oxygen (inhaled) → Carbon Dioxide + Water + Energy (ATP).

Students should mention that during intense exercise, the heart rate increases to pump this oxygenated blood to the working muscles faster.

**Curriculum Link: Biology: Bioenergetics – The need for energy for life processes; the process of aerobic respiration.**

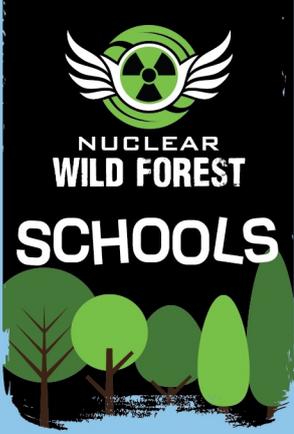
## ACTIVITY 3: THE MUDDY RESISTANCE FORCE

Diagram Requirements: Students should draw a central figure with four arrows.

- Forward arrow: Thrust (applied force from muscles).
- Backward arrow: Drag / Water Resistance / Friction.
- Upward arrow: Upthrust (if in deep water/mud) or Normal Contact Force.
- Downward arrow: Weight (Gravity).

Viscosity: Students should note that mud is more viscous (thicker) than water, meaning it resists flow more strongly, requiring more Thrust to overcome the Drag.

**Curriculum Link: Physics: Forces – Forces as pushes or pulls; forces being needed to cause objects to stop or start moving.**



NAME :

# MUDDY OBSTACLE CHALLENGE

Here we'll create a word bank to dip into.

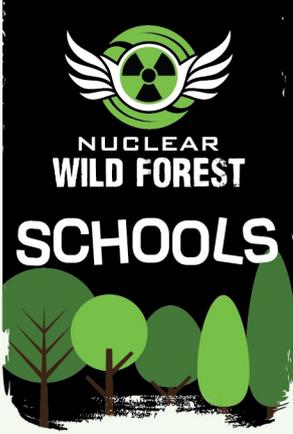
## 1: SENSORY WORD BANK

To write a great recount after the trip, you need "juicy" vocabulary. Avoid the word "muddy."

The Task: Create a table with five columns: Sight, Sound, Touch, Smell, Taste. Fill each column with three ambitious adjectives or onomatopoeic words (e.g., squelch, viscous, pungent, grit) that describe the obstacle course environment.







# TEACHER NOTES

## Activity 1: Sensory Word Bank

*Curriculum Link: English: Writing – Vocabulary, grammar and structural features; choosing vocabulary for effect.*

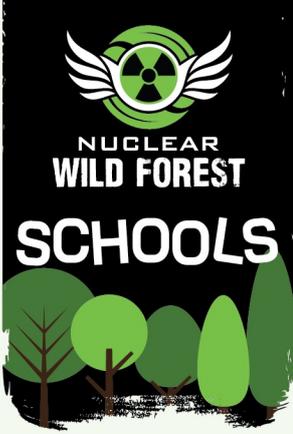
## Activity 2: The Captain's Speech

*Curriculum Link: English: Writing – Writing for a wide range of purposes and audiences; using rhetorical devices.*

## Activity 3: The Survival Manual

*Curriculum Link: English: Writing – Using Standard English confidently; organising writing into clear sentences and paragraphs.*

Teacher Tip: Encourage students to use the word bank to create Extended Metaphors (e.g., "The mud pit was a hungry beast, swallowing my boots whole"). This aligns with the KS3 curriculum goal of using figurative language to "enhance effects."



# MUDDY WORD BANK

## 1. THE TEXTURES OF MUD (ADJECTIVES)

**Viscous:** Thick, sticky, and semi-fluid (like treacle).

**Gelatinous:** Having a jelly-like consistency.

**Gritty:** Containing small particles of sand or stone.

**Saturated:** Completely soaked through; holding as much water as possible.

**Adhesive:** Acting like glue; sticking to everything it touches.

**Pliable:** Easily bent or shaped (used for thick, clay-like mud).

## 2. THE SOUNDS OF THE COURSE (ONOMATOPOEIA & VERBS)

**Squelch:** The sound of a boot being pulled out of deep muck.

**Slop:** The sound of liquid mud hitting a surface.

**Suck:** The vacuum-like sound of the mud gripping your legs.

**Splatter:** To splash small drops of mud everywhere.

**Gurgle:** The sound of air bubbles escaping from a swampy pit.

## 3. THE PHYSICAL STRUGGLE (DYNAMIC VERBS)

**Heave:** To lift or pull with a massive effort.

**Flail:** To wave or swing your arms wildly (usually while losing balance!).

**Scramble:** To move hurriedly or clumsily over rough ground.

**Trudge:** To walk slowly and with heavy steps.

**Haul:** To pull yourself up using a rope or ledge.

## 4. THE SENSORY ATMOSPHERE (SMELL & SIGHT)

**Pungent:** A sharp, strong, or "earthy" smell.

**Stagnant:** Water or mud that has been sitting still and smells "off."

**Murky:** Dark and dirty; not clear.

**Opaque:** Not able to be seen through (unlike clear water).