

Formation of Oil			
Science and Technology Es and Os	Activity Overview	Resources	Suggested Interdisciplinary Links
<p>SCN 3-13a: Using a microscope, I have developed my understanding of the structure and variety of cells and of their functions.</p>	<p>Pupils will look at pond water under a microscope to identify any plant or animal life.</p> <p>Pupils will create a time line showing length of time for oil and gas formation alongside other key historical dates.</p>	<p>Formation of Oil Elicitation Activity Story</p> <p>Formation of Oil Experiment Record</p> <p>Book reference: <i>Oil and Natural Gas</i>, Pages 16-21</p> <p>Materials for elicitation activity:</p> <ul style="list-style-type: none"> • A4 paper • Colouring pencils <p>Materials per pair for Activity 1:</p> <ul style="list-style-type: none"> • Microscopes, • Microscope slides, • Cover slips • Pond water, • Dropper <p>Materials for Activity 2:</p> <ul style="list-style-type: none"> • Adding machine paper or similar • Metre sticks • Pens, • Coloured pencils 	<p>MTH 2-21a MTH 3-21a LIT 3-02a LIT 3-04a LIT 3-06a/LIT 4-06a</p>

Reservoirs and Production			
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<p>SCN 2-17a: Having explored the substances that make up Earth's surface, I can compare some of their characteristics and uses.</p> <p>SCN 3-17b: I have participated in practical activities to extract useful substances from natural resources.</p>	<p>Pupils will investigate porosity and relate it to the processes involved in extracting oil.</p>	<p>Reservoirs and Production Experiment Record</p> <p>Book Reference: <i>Oil and Natural Gas</i>, pages 24-27</p> <p>Materials for Introductory Activity:</p> <ul style="list-style-type: none"> • Marble cake • Clear plastic straws <p>Materials per group for Main Activity:</p> <ul style="list-style-type: none"> • 1 bag large gravel • 1 bag small gravel • 1 bag sand • 1 100 ml measuring cylinder • 3 500 ml beakers • Water coloured with food dye 	<p>MNU 3-11a LIT 3-02a</p>

Pump it up			
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<p>SCN 3-17b: I can participate in practical activities to extract useful substances from natural resources.</p> <p>SCN 4-08b: Through experimentation, I can explain floating and sinking in terms of the relative densities of different materials.</p>	<p>Pupils will investigate how oil and natural gas are pumped or recovered from the earth. They will learn how oil flows from the well by its own pressure (primary recovery) or is pumped out is forced from a rock formation by a method of injecting natural gas or water into the formation (secondary recovery).</p>	<p>Primary Recovery Experiment Record</p> <p>Oil Well Drilling Experiment Record</p> <p>Book Reference: <i>Oil and Natural Gas</i>, pages 32-37</p> <p>Materials for Introductory Activity:</p> <ul style="list-style-type: none"> • One Carbonated beverage <p>Materials per Group for Activity 1:</p> <ul style="list-style-type: none"> • Medium zip top freezer bag • 2 straws • Water • Pan • Paper towels • Scissors <p>Materials for Activity 2:</p> <ul style="list-style-type: none"> • 500 ml conical flask • 2 hole rubber bung to fit flask • 250 ml beaker • 150 ml vegetable oil • 350 ml water • Oil soluble colouring • 60 cc syringe • Petroleum jelly <p>Materials per Group for Elaboration Activity:</p> <ul style="list-style-type: none"> • 12 Egg carton • 12 Balloons • Pencil • Skewer • Access to tap • 2 straws • Mess tray • Safety goggles 	<p>HWB 4-23a LIT 3-02a</p>

Products from Petroleum			
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<p>SCN 3-15b: Having contributed to a variety of practical activities to make and breakdown compounds, I can describe examples of how the properties of compounds are different from their constituent elements.</p> <p>SCN 4-17a: I have explored how different materials can be derived from crude oil and their uses. I can explain the importance of carbon compounds in our lives.</p>	<p>Pupils will investigate the processes involved in the formation of oil and oil-based products through 3 interactive activities which can be carried out over several days, including modelling molecules and making slime.</p>	<p>Hydrocarbons Handout</p> <p>Hydrocarbons Worksheet</p> <p>Polymer Power Handout</p> <p>How Much is a Litre Worksheet</p> <p>Book Reference: <i>Oil and Natural Gas</i>, pages 44-49</p> <p>Materials per Group Activity 2:</p> <ul style="list-style-type: none"> • Molecule assembly set (can be purchased or simply a mix of marshmallows, gumdrops and cocktail sticks.) <p>Materials per Group Activity 3:</p> <ul style="list-style-type: none"> • PVA glue • Borax solution • Plastic cup • Stirring stick 	<p>LIT 3-09a TCH 3-01a</p>

Name that Tune: How is Oil found			
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<p>SCN 3-17a: Through evaluation of a range of data, I can describe the formation, characteristics and uses of soils, minerals and basic types of rocks.</p>	<p>Pupils will investigate how sound waves can be used to locate variations in density and apply this knowledge to understand how geologists use seismic information to locate oil deposits.</p>	<p>“Rock Ages” experiment record</p> <p>“Oil King” experiment record</p> <p>Book Reference: <i>Oil and Natural Gas</i>, pages 28-31</p> <p>Materials for introductory activity:</p> <ul style="list-style-type: none"> • Tuning Fork • Rocks <p>Materials per pupil Activity 1:</p> <p>Colouring pencils/pens</p> <p>Scissors</p> <p>Materials per Group Activity 2:</p> <ul style="list-style-type: none"> • A cardboard box or other opaque container with cardboard lid • Sand • Colouring pens • Clear drinking straws • Graph paper • Small rock samples • Balloon with water • Food colouring • Skewer 	<p>HWB 3-23a</p> <p>LIT 3-02a</p> <p>LIT 3-09a</p> <p>TCH-4-01a</p> <p>MNU 2-03a</p> <p>SOC 3-14a</p>