

















| Biology | Chemistry | Physics |
|---|---|--|
| <p>1 Natural selection is driven by competition for resources in variation within species. Survival of the fittest, in which the fittest is most adapted. The theory of evolution describes how species change over time. The theory by Charles Darwin suggests that this happens it by natural selection.</p> | <p><u>Calculating rates of reaction</u></p> <ul style="list-style-type: none"> ❖ The loss in mass of reactants over time ❖ The volume of gas produced over time ❖ The time for a solution to become opaque or coloured. <p>rate of reaction = quantity of reactant used / time taken rate of reaction=quantity of product formed / time taken</p> | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>switch (open) </p> <p>switch (closed) </p> <p>cell </p> <p>battery </p> <p>diode </p> <p>resistor </p> <p>variable resistor </p> <p>LED </p> </div> <div style="width: 45%;"> <p>lamp </p> <p>fuse </p> <p>voltmeter </p> <p>ammeter </p> <p>thermistors </p> <p>LDR </p> </div> </div> <p>Series circuit– a circuit that is made of 1 loop.</p> <p>Parallel circuit(s) – a circuit that is make of 2 or more loops.</p> |
| <p>2 Speciation – if two populations of one species become so different that they can no longer interbreed to produce fertile offspring, they have in fact formed two new species</p> | <p>Factors affecting rates of reaction</p> <ul style="list-style-type: none"> • The concentrations of reactants in solution, • The pressure of reacting gases, • The surface area of solid reactants, • The temperature and • The presence of catalysts. | <p>Potential Difference/Voltage (V) – measures in V volts. To measure voltage you must place a voltmeter around a component (parallel).</p> <p>Current (I) measured in A amps– Electric current is the flow of electrical charge (electrons). Measured by an ammeter (in series)</p> <p>Resistance (R) – measured in Ω (ohms)- the amount the atoms of the metal and component resist the flow of electrons</p> <p style="text-align: center;">V = I x R</p> |
| <p>3 Fossils are the ‘remains’ of organisms from millions of years ago, which are found in rocks. Fossils may be formed:</p> <ul style="list-style-type: none"> • from parts of organisms that have not decayed because one or more of the conditions needed for decay are absent • when parts of the organism are replaced by minerals as they decay • as preserved traces of organisms, such as footprints, burrows and rootlet traces | <p><u>When two particles collide</u> (hit each other) sometimes a chemical reaction happens. Not all collisions result in a chemical reaction. For a reaction to occur, the particles must reach the activation energy.</p> <div style="text-align: center;">  <p>Ineffective collision</p>  <p>Effective collision</p> </div> | <p>Charge Flow (Q) – measured in C coulombs. This is a measure of how much charge passes in a given time.</p> <p style="text-align: center;">Q = I x t</p> |
| <p>4 Many early forms of life were soft-bodies, which means that they have left few traces behind. What traces there were have been mainly destroyed by geological activity.</p> | <p><u>Catalysts</u> are substances that change the rate of a reaction without being used up in the reaction Catalysts never produce more product – they just produce the same amount more quickly.</p> | <p>Conductor – a component or material that easily allows electricity to pass through it. Insulator – a component or material that doesn’t easily allow electricity to pass through it.</p> |
| <p>5 Mass extinctions – periods of the Earth’s history where large numbers of the Earth’s species die out at the same time.</p> | <p>Activation energy – this minimum amount of energy needed for particles to react.</p> | |

Quiz Time

Week 1 Quiz

1. Who came up with the theory of evolution?
2. What does the term survival of the fittest mean?
3. Draw 3 electrical symbols
4. Describe the difference between series and parallel circuits
5. How can you calculate the rate of reaction?

Week 4 Quiz

1. What is a catalyst?
2. What is the equation that links Voltage, Resistance and Current
3. Describe the term charge flow?
4. Draw a variable resistor
5. Draw a diode

Week 2 Quiz

1. Draw an LED
2. Draw an LDR
3. Describe the term speciation?
4. Identify 3 factors affecting rates of reaction
5. A single loop circuit is called?

Week 5 Quiz

1. Describe the term insulator?
2. Describe the term conductor?
3. Describe the term activation energy?
4. Describe the term extinction?
5. Identify 2 factors affecting rates of reaction

Week 3 Quiz

1. Describe the collision theory
2. Describe the term voltage
3. Describe the term current
4. Describe the term resistance
5. Describe how fossils are formed [3 points]

Week 6 Quiz