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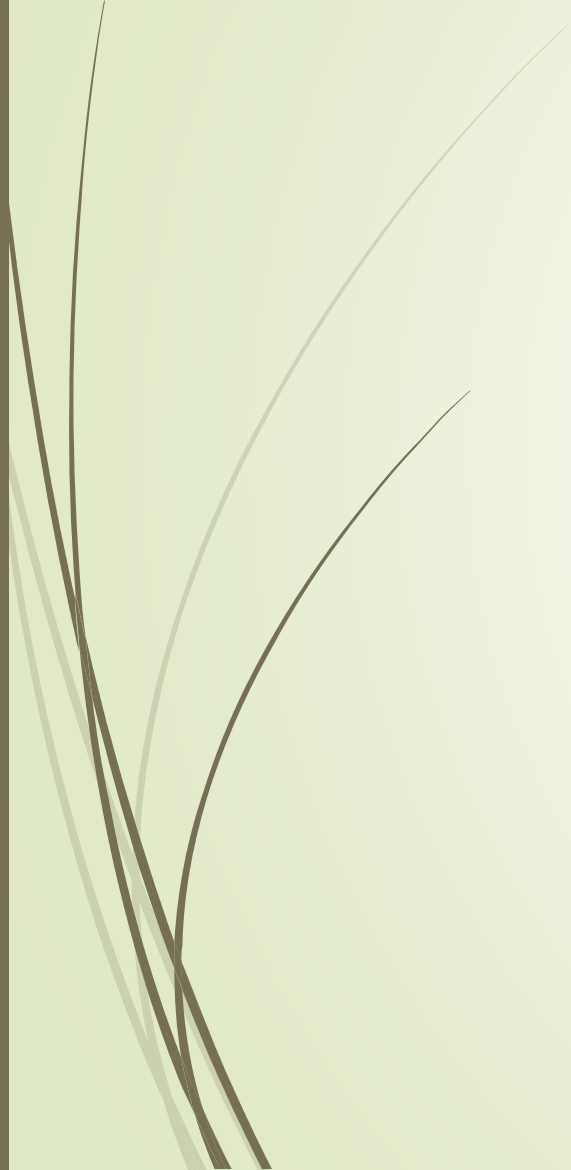


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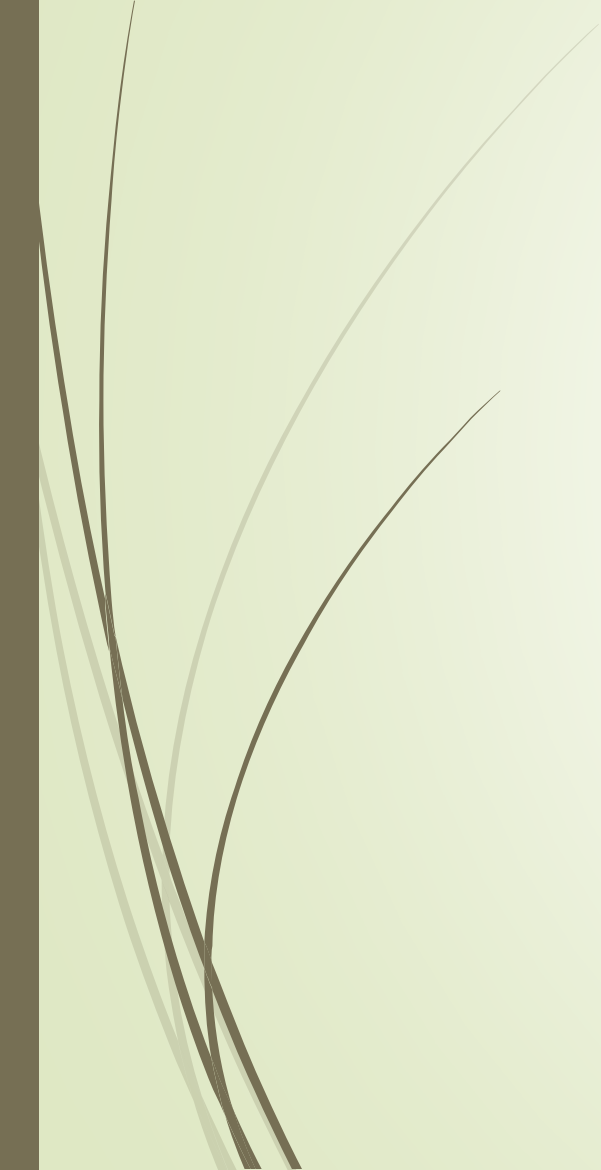






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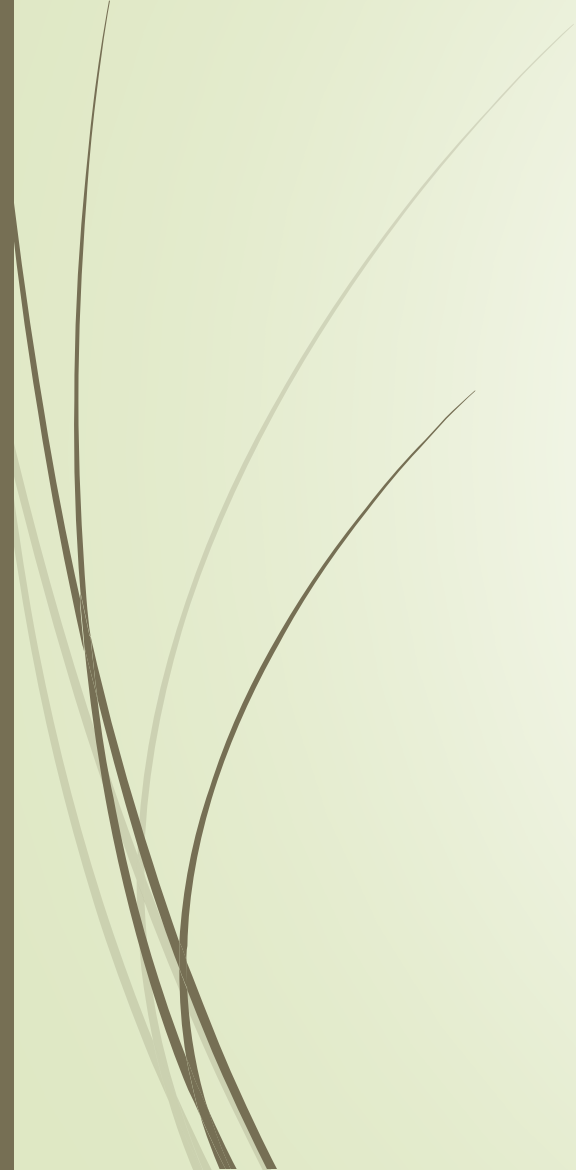
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Knowledge of the arrangement and movement of the particles, and their relative stability in terms of the arrangement and movement of the particles.

Models of Matter: Atoms and Molecules

- compare the relative size of atoms to other particles and appreciate that atoms are made up of a positively charged nucleus (protons and neutrons) and negatively charged electrons (e.g. the various atomic models)
- compare atoms and molecules
- show an awareness that technologies resulting from knowledge of the atom have created social and ethical issues, risks and costs (e.g. atomic bomb)
- recognize that atoms have mass that is of two or more atoms, chemically combined
- state the number and types of atoms, given the chemical formula of a compound (writing of

Content	Learning Experiences
<p>3. Multiplication and Division</p> <p>Students should have opportunities to:</p> <ul style="list-style-type: none"> use concrete objects and count the total number of objects in the groups. use language such as “9 groups of 5” and “2 fives” to describe multiplication and division. use pictorial representation to solve multiplication and division problems. solve 1-step word problems involving multiplication and division with pictorial representation. 	<p>Students should have opportunities to:</p> <ul style="list-style-type: none"> understand the concepts of multiplication and division. use objects to solve multiplication and division problems. use pictorial representation to solve multiplication and division problems. solve 1-step word problems involving multiplication and division with pictorial representation.



Exercise 1D

Basic Level

1. If y is inversely proportional to x and $y = 12$ when $x = 3$, find the value of x when $y = 4$.

(i) Find an equation connecting x and y .

(ii) Calculate the value of x when $y = 30$.

(iii) When the particles are at a certain distance apart, the force of repulsion is 20 N. Find the force of repulsion when the distance is 3 times as great.

Intermediate Level

2. The height, h cm, of a cone is inversely proportional to the square of the base radius, r cm. Cone A has a base radius of 6 cm and a height of 5 cm. Cone B has a base radius of 3 cm and a height of 20 cm. Cone C has a base radius of x cm and a height of y cm. Find the value of x and y when the volume of Cone C is the same as the volume of Cone A.

(i) Write down an equation connecting h and r .

(ii) Find the base radius of Cone C.

(iii) Find the height of Cone C.

(iv) Find the value of x when $y = 16$.

(v) Calculate the value of h when $r = 3$.

3. For each of the following equations, state the two variables which are inversely proportional to each other.

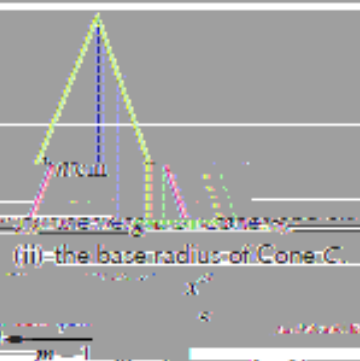
(a) $xy = 3$

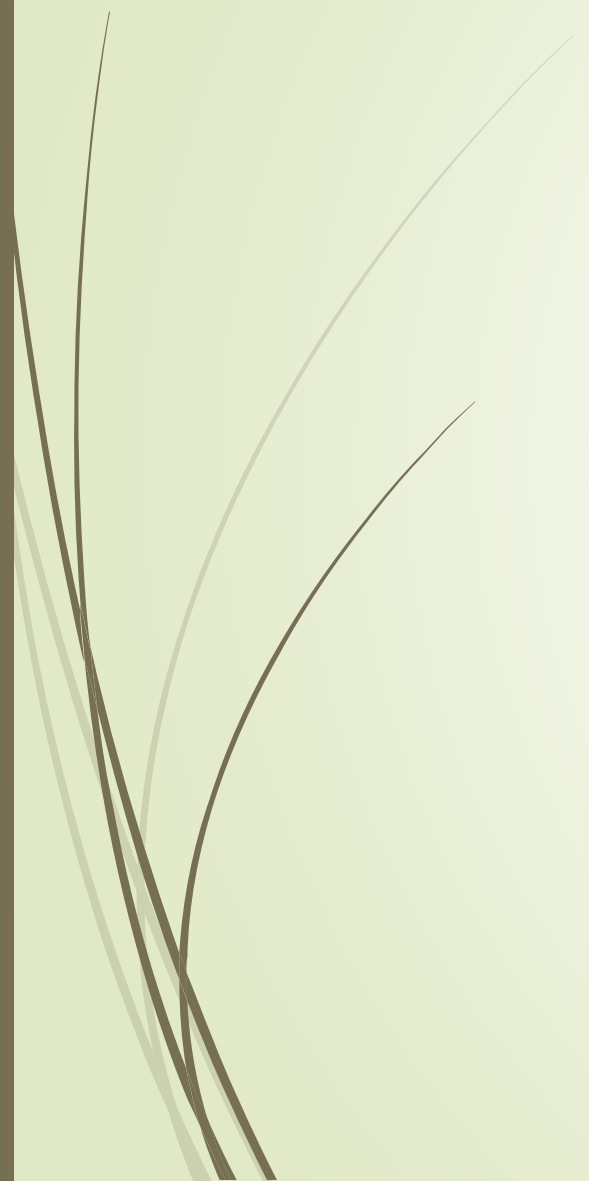
(b) $y = \frac{1}{x}$

(c) $x^2 = \frac{1}{y}$

Advanced Level

9. If y is inversely proportional to x , $y = 1$ and the area of a square is 4, find the value of x .





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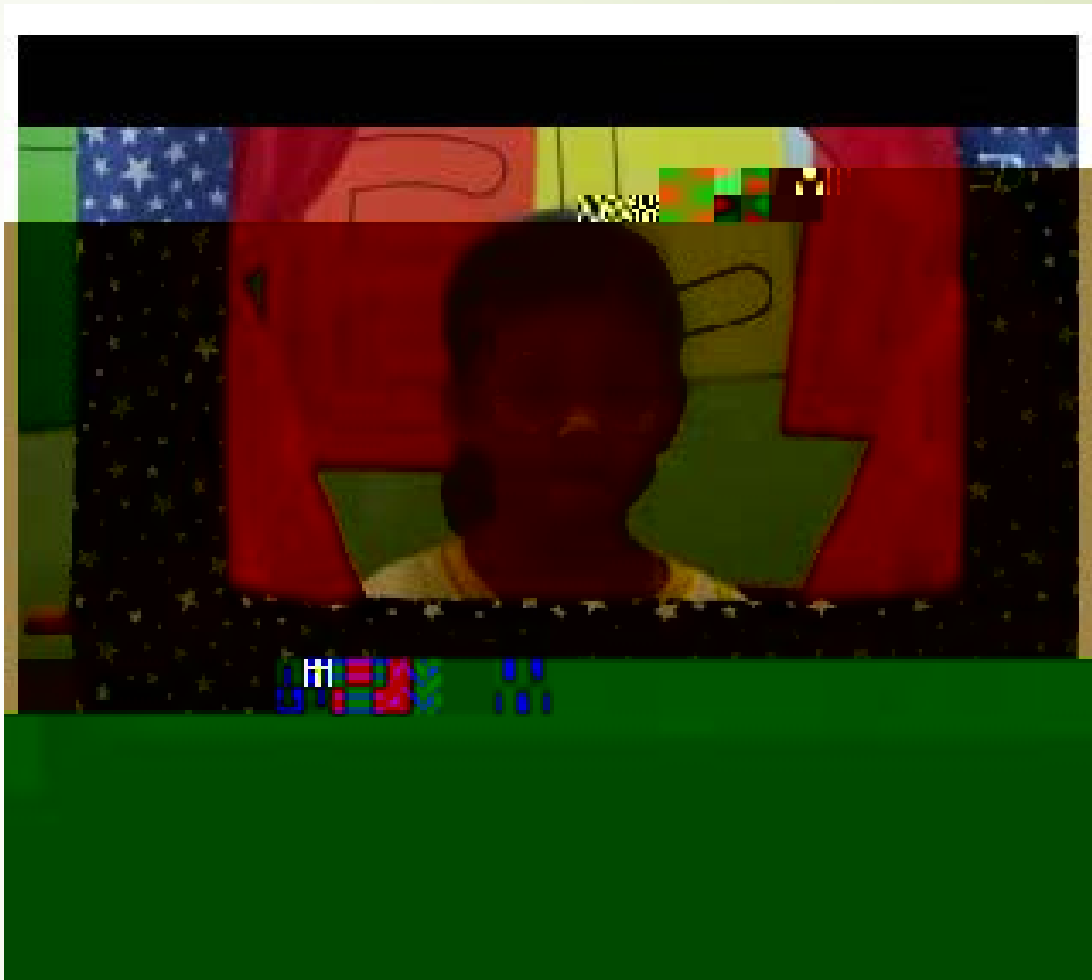


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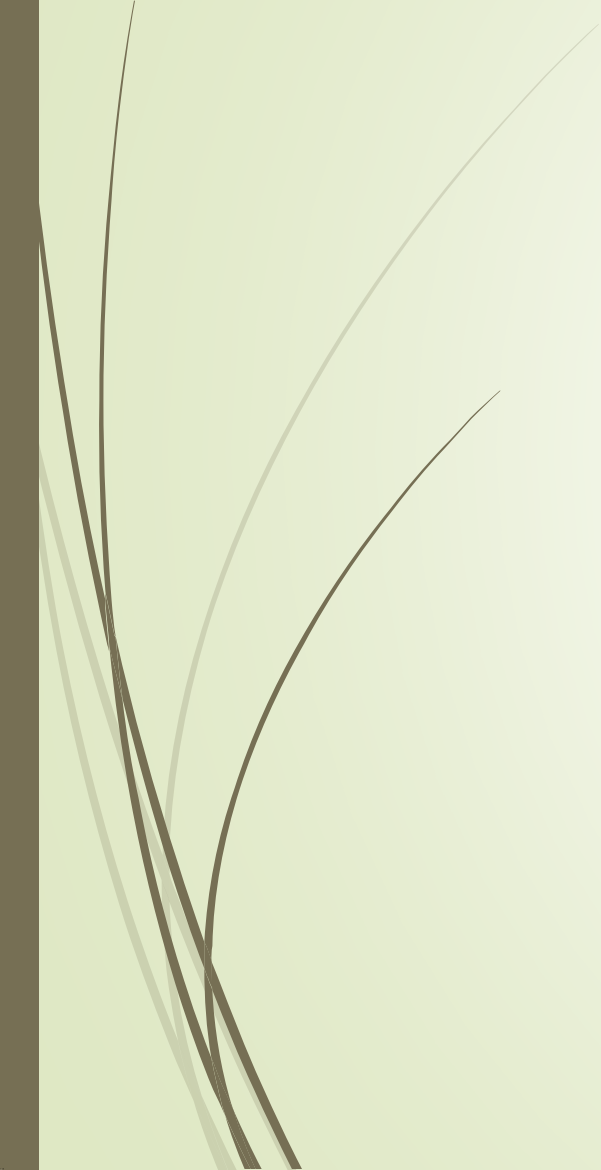
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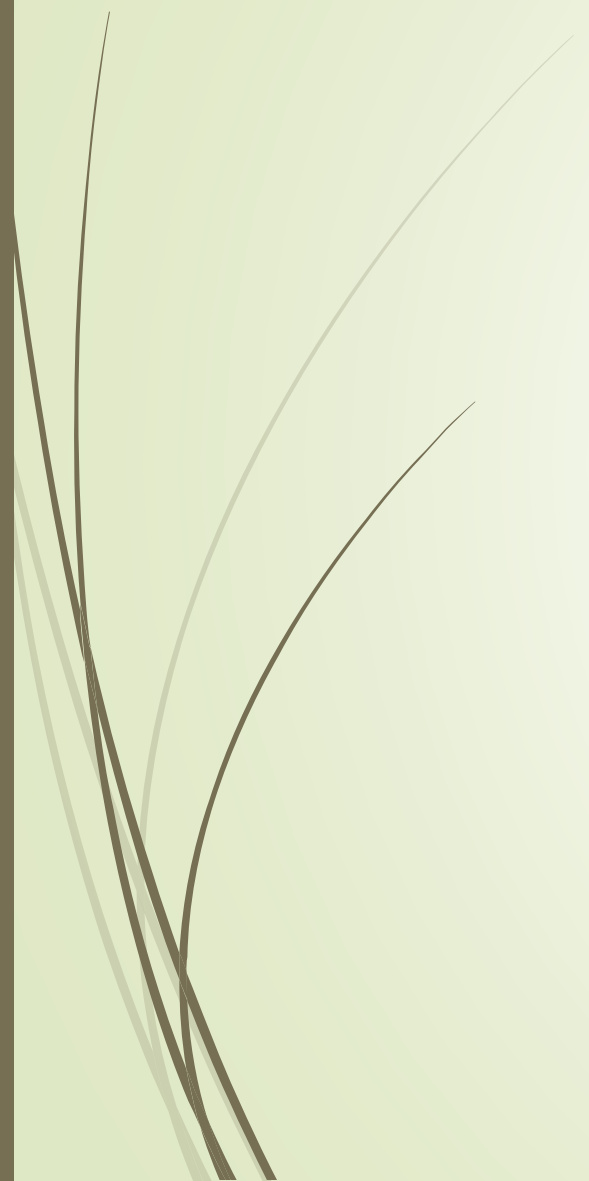






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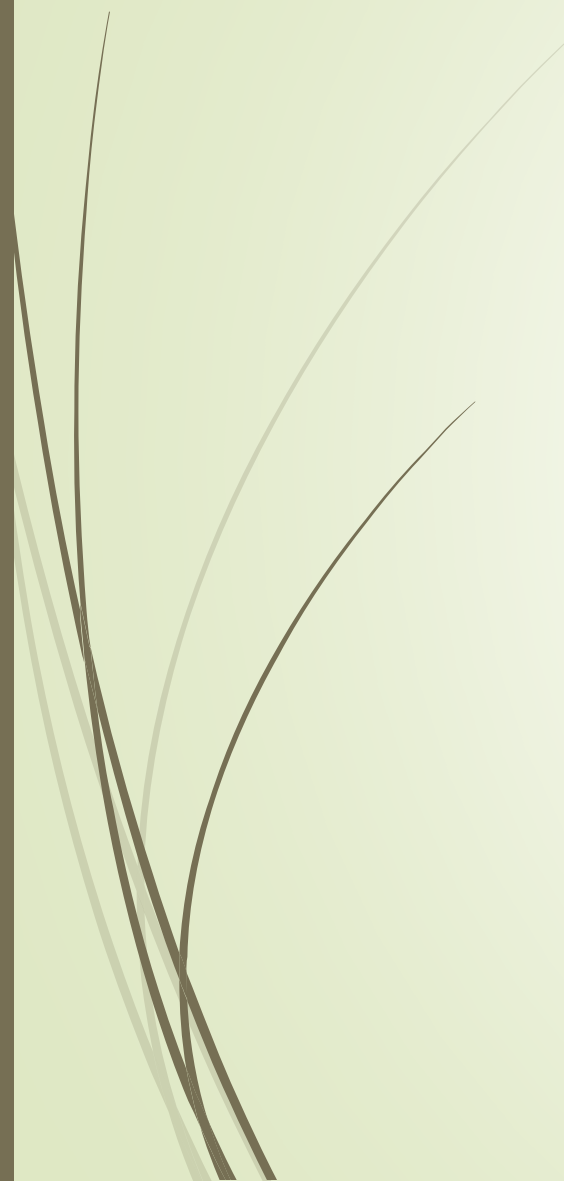




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