UNIT 1 *Indices*   Lesson Plans $\boxed{\textbf{St}}$

Lesson No.   *References*

1   Multiplication and Division

Mental Test

Review basic multiplication and division   T1.1

Mental practice and tests   M1.1

Multiplication Table   A1.1

Exercises   T1.1

Homework   A1.2 and P1.1 (Q.14 and 15)

2   Squares, Cubes, Square Roots and Cube Roots

Mental Test   M1.1

Introduce squares and cubes   T1.2
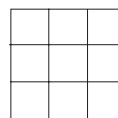   e.g. use of diagrams
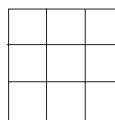

    1          $4 = 2 \times 2 = 2^2$ $9 = 3 \times 3 = 3^2$ OS1.1

    and cubes for 1^3, 2^3, etc.

Introduce through example above – work backwards
from area to length for square root, etc.

Exercises   T1.2

Homework   P1.2 (Q.4)

3   Index Notation

Mental Test   M1.3

Introduce through need for more efficient way of writing

expressions,e.g. $2 \times 2 \times 2 \times 2 \times 2 = 2^5$.

 Develop rules of indices ($a^m \times a^n = a^{m+n}$ and $a^m \div a^n = a^{m-n}$)

   through examples and justify $a^0 = 1$.

Exercises   T1.3

Introduce factors   T1.4 and A1.6

Homework   Complete A1.6 and P1.4

4.   Prime Factors

Definition of a prime number   T1.5

Identifying primes – Eratosthenes Sieve   A1.7

Exercises   T1.5

Highest common factor – Exercises   T1.5

Homework   P1.5 (Q.5 and 6)

UNIT 1 *Indices*   Lesson Plans $\boxed{\textbf{A}}$

Lesson No.   *References*

1 **Squares, Cubes, Square Roots and Cube Roots**

Mental Test   M1.1

Introduce squares and cubes   T1.2
   e.g. use of diagrams

   1         $4 = 2 \times 2 = 2^2$ $9 = 3 \times 3 = 3^2$ OS1.1

   and cubes for 1^3, 2^3, etc.

Introduce through example above – work backwards
   from area to length for square root, etc.

Exercises   T1.2

Homework   P1.2 (Q.4)

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2 **Index Notation**

Mental Test   M1.3

Introduce through need for more efficient way of writing

   expressions,e.g. $2 \times 2 \times 2 \times 2 \times 2 = 2^5$.

Develop rules of indices ($a^m \times a^n = a^{m+n}$ and

   $a^m \div a^n = a^{m-n}$) through examples and justify $a^0 = 1$.

Exercises   T1.3

Introduce factors   T1.4 and A1.6

Homework   Complete A1.6 and P1.4

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3 **Prime Factors**

Definition of a prime number   T1.5

Identifying primes – Eratosthenes Sieve   A1.7

Exercises   T1.5

Highest common factor – Exercises   T1.5

Homework   P1.5 (Q.5 and 6)

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4 **Standard Form**

Need for shorthand way of expressing very large and very
   small numbers – time line

Worked examples   T1.7

Calculator display warning

Exercises   T1.7

Homework   P1.7

	UNIT 1 *Indices*	Lesson Plans	**A**

Lesson No. *References*

5 **Calculations with numbers in standard form**

Worked examples T1.8

Exercises T1.8

Activity to help understanding of standard form A1.11

Exercises T1.8

Homework P1.8 (Q. 12, 13 and 15)

UNIT 1 *Indices*   Lesson Plans $\boxed{\textbf{E}}$

Lesson No.   *References*

1   Index Notation

Introduce through need for more efficient way of writing   T1.3

expressions, e.g. $2 \times 2 \times 2 \times 2 \times 2 = 2^5$.

Develop rules of indices ($a^m \times a^n = a^{m+n}$ and

$a^m \div a^n = a^{m-n}$) through examples; justify $a^0 = 1$.

Exercises	T1.3
Activity to introduce factors and prime numbers	A1.6
Worked example for HCF	T1.3
Homework	P 1.3 (Q.8) and P 1.5 (Q.5 and 6)

2   Rules of Indices

Mental Test	M1.3
Activity to consolidate notation	A1.10
Extension of index notation to negative and fractional powers	
Worked Example	T1.6
Exercises	T1.6
Homework	P 1.6 (Q.7, 8 and 9)

3   Standard Form

Mental Test	M1.5
Need for shorthand way of expressing very large and very small numbers – time line	OS1.2
Worked examples	T1.7
Exercises	T1.7
Homework	P1.7

4   Calculations with numbers in standard form

Worked examples	T1.8
Activity to help understanding of standard form	A1.11
Exercises	T1.8
Homework	P 1.8 (Q.12, 13 and 15)