

Upper Primary Science Kit (UPSK) Technical Specification ANNEXURE -1 SI.

No.	Name of the Item	Technical Specification	Quantity
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1

Kit manual

Kit manuals may be purchased from sales counter of Publication Division, NCERT, New Delhi. The price of all the kit manuals are ranging Rs.50 to 300/-

1 No.

2.

Kit box with carton

6 ply

Main Body of 26 SWG and partitions of tin sheet. Doors will be fitted 15 mm above the ground level with main body. Right hand door and left hand door should have two racks. The rack partition should have guides The doors should have suitable piano hinges duly spot welded/riveted etc. with main body. Provision for locking system & two folding type handle 6 mm dia. for carrying box. Provision for supporting rest for hanging doors to be made . All over box size 470 mm x 450 mm x 280 mm box weight should be 5.75 kg. \pm 100g.

01 No.

3.

Panel for Connections

MDF Wooden box / plastic ABS

170 mm x 140 mm, Taper 50 mm back and 25 mm front side, painted white, markings in black.

DC Voltmeter :

0 - 20 V with resolutions of 0.4 V.

0 - 1 Amp. with resolutions of 20 mA. Rectifier :

Four diode rectifier bridge circuit (Full wave rectification of AC).

Panel connections : For input / output etc.

1 No.

4

Light Emitting Diode (LED)

Standard

1 No.

5

Laboratory Thermometer

Glass, alcohol filled, -10° C to 110° C, graduation 1° C with card board/plastic cover and cotton at both ends.

1 No.

6

Clinical Thermometer

Oral Clinical thermometer along with packing, graduation 95° F - 108° F and 35° C - 43° C. ISI mark.

1 No.

7

Spherical Plano

Concave Lens and Double Convex Lens

Three perspex pieces: Spherical Plano Concave Lense, Double Convex Lense and

Plano Convave Lense. Each made from Perspex sheet of size 50 mm x 20 mm x 12 mm/15mm.

1 set

8
Perspex Plano Convex Cylindrical Lens
Dia = 25/28 mm, half of the diameter x 13/14 mm height.

1 No.

9
Square Glass Slab
Square glass slab, size 50 mm x 50 mm x 12 mm thick.

1 No.

10
Triangular Glass Prism
Glass Prism 25 mm equilateral triangle.

01 No.

11
Generator Assembly
Assembled in perspex transparent sheet, stable body, overall height 130 mm, thick rectangular base 170 mm x 120 mm attached with two coils, output 15 V and 500 mA.

01 No.

12

Boiling Tube

Borosilicate Glass, 90 mm height x 20 mm dia with cork.

02 Nos.

13

Y-Tube

Borosilicate Glass tube, diameter 12 mm. Overall length 105 mm fitted with cork
(To fit into item No.15 bell jar inner side).

01 No.

14

Cover slips

Thickness 0.2-0.3 mm approx. 18 mm square glass pieces.

20 Nos.

15

Bell Jar

Borosilicate 3.5 mm thick glass, neck inside dia. 18/19 mm × 20/22 mm height.
Overall length 85/95 mm × inside dia. 55 mm with rim diameter 62/64 mm. To fit
into item No.13 inner side item no. 28 upper side and item no. 73 upper side
mouth.

01 No.

16

Double mouthed flask

Borosilicate. Thickness 1.5 mm with one mouth dia. 26 mm x 25 mm height (with
rim) and other dia. 06 mm x 28 mm length. Bulb outer dia. 48 mm with overall
length 110 mm. Item no. 63 fit into upper mouth.

01 No.

17

Glass Tube

Length 155 mm x outer dia. 06 mm, Soda glass, ends finished.

01 No.

18

Glazed Glass Plate

Glass plate size 100 mm x 100 mm x
2.5 mm/3mm.

01 No.

19

Double Concave Lens

Glass, Focal length 20 cm and dia. 50 mm.

01 No.

20

Double Convex lens

Glass, Focal length 20 cm and dia. 50 mm.

01 No.

21

Concave Mirror

Glass, Focal Length 20 cm, dia. 5 cm.

01 No.

22

Convex Mirror

Glass, Focal Length 20 cm, dia. 5 cm.

01 No.

23

Graduated Syringe

Standard, plastic, capacity 10 mL.

01 No.

24

Half Protractor

Transparent, plastic, standard, 0 - 180°.

01 No.

25

Ping pong ball

Standard dia 40.

01 No.

26

Thermocol Ball

20 No.

27

Transparent PVC plastic tube

Dia 8 mm x 1 meter

01 No.

28

Electroscope Assembly

(i) Aluminium Disc dia. 52 mm and thickness 24 SWG (ii) aluminium rod dia. 03 mm and length 50 mm. fitted in center of disc (iii) rubber cork axial length 25 mm. and dia. of smaller face 17 mm inserted in the aluminium rod with bigger face touching the disc.

iv) Aluminium rod has a right angle bent of length 08 mm from the outer end.

▪

01 set

29

Plastic sheet HDPE

Size 100 mm x 100 mm x 3 mm. White milky.

01 No.

30

Plain mirror strips

Good quality, 150 mmx30 mm x2 mm.

03 Nos.

31

Magnifying glass

Optical glass, focal length 120 mm, with plastic handle.

02 Nos.

32

Glass slides

Standard plain glass slide.

10 No.

33

Permanent Glass slides

Hydra showing budding. Packed in plastic case.

01 No.

34

Permanent Glass slide

Amoeba showing Binary Fission. Packed in plastic case.

01 No.

35

Permanent Glass slide

Paramecium Packed in plastic case.

01 No.

36

'G' Clamp

50 mm jaws, maximum opening 40 mm, with two locking screws and holes. HDPE.

02 Nos.

37

Glass Rod

Length 150 mm, dia. 06/07 mm.

02 Nos.

38

Fuses &

Model showing heating effect of current

Resistance wire enclosed in transparent plastic container of dia. 25 mm and height 50 mm and eureka wire 40 SWG.

01 No.

39

Ray Streak Box

U shape mild sheet of 24 SWG. Size of the front face: 80 to 100 mm x 70 mm with M shape window of size of 30 mm x 30 mm starting from centre bottom side of front face. Size of two side faces: 40 mm x 70 mm. butt welded to the front face. Size of the M shape window cover: 30 mm x 40 mm. Front face, projected to the height of 15 mm having 3 slits of 0.75 mm thickness starting from bottom. Height of slits

30 mm, second slits at the centre. Distance between the slits 5 mm. Screw type bulb holder spot welded from inside of front face at the centre of the window.

Having one bulb 3.2 V, bulb to be projected in the windows of front face. Complete apparatus painted black colour.

01 set

40

Four cell holder

Cell holder for 4 'D' type cells. Box outer size 135 mm x 75 mm x 35 mm. height with cover.

01 No.

41

Rubber bands

30 Nos.

42

Rubber suckers

Standard, 50 mm diameter.

02 Nos.

43

Rubber Cork

Standard, arm bed, size nos. 2,3,4,5 and 6.

02 each

44

Thin rubber sheet
100 x 100 x 2 mm

01 No.

45

Magnetic Compass

Metal case, polystyrene transparent top, magnetized needle with north marked red and south marked blue, 50 mm size.

01 No.

46

U shape Magnet

Arm length 50 mm, N and S poles to be marked. Alnico

01 No.

47

Bar Magnet

Size 75 mm x 12 mm x 08 mm, red colour N and S pole mentioned. Alnico

02 No.

48

Cylindrical Magnet

Diameter 16 mm and length 25 mm. Ferrite

01 No.

49

Ring Magnet

Outer diameter 18 mm and thickness 3 mm. Ferrite

01 No.

50

Disc Magnet

Diameter 35 mm and 8 mm thick. Ferrite

01 No.

51

Spirit Lamp

Steel body along with brass wick holder dia 65 mm, height 50 mm

01 Nos.

52

Colour Disk

Thick ivory white card sheet of diameter 100 mm, with seven colours sectors and pasted on generator wheel.

(1st Sector) - 70 ° - Lemon Yellow No. 121

(2nd Sector) - 65 ° - Light Green No. 165

(3rd sector) - 450 - Turquoise Blue No. 163

01 No.

(4th Sector) - 40 ° - Prussian Blue No. 149

(5th Sector) - 45 ° - Mauve No. 161 (6th Sector) - 50 ° - Orange No. 143 (7th Sector)
- 45 ° - Poster Red No. 116 Total : 360 ° ,

53

Aluminium Ruler cum Lever

Anodized Aluminium Ruler 29 mm x 300 mm x 1.5 mm. Marking in inch, cm and mm (smallest division 1/10" and 01 mm respectively). Graduation printed in black. With holes (diameter 2.5 mm) at 3 cm intervals.

01 No.

54

Plug Key

One way plug key (Brass), base 80 mm x 55 mm.

01 No.

55

Copper Wire

100 cm long, thickness 24 SWG.

01 No.

56

Copper Strip

80 mm x 5 mm x 1 mm

01 No.

57

Zinc Strip

80 mm x 5 mm x 1 mm

01 No.

58

Magnesium Ribbon Roll

Fine Quality role. 25g.

01 No.

59

Test tube holder

Length 200 mm, to hold the test tubes upto 10 mm dia and one for 20 mm dia boiling tube.

01 each

60

Rods with

holder for conduction of heat

Total length of holder 215 mm/220 mm with plastic/wooden handle at one end and brass pipe I.D. 6.3 mm x 50 mm at another end forming T shape.

M.S rod & aluminum rod shall be 200 mm length. And Dia. 6 mm grooved on rod ten equal segments.

01 Set

61

Tuning Fork

Mild Steel Chapter 06 mm x 3.4 mm, prongs 110 mm long, frequency 256 Hz.

01 No.

62

Slinky

Steel Wire Spiral roll, outer dia. 52 mm and close size 68 mm to 70 mm.

01 No.

63

Deflagrating Spoon

Diameter 12 mm, MS Sheet Katory welded with 02 mm dia MS wire. Overall height 165 mm, along with cork (to fit into item no. 16) of bigger dia 24 mm, smaller dia 18.5 mm and length 26.5 mm

01 No.

64

Periscope (Frame with mirror)

Body hollow PVC pipe ID 60 mm, length 250 mm half cut at the opposite ends to fit 50 mm plane mirrors with rotatable frame.

01 No.

65

Scalpel

Overall length 140 mm/150 mm cutlery steel, blade tempered (standard).

01 No.

66

Tongs pair

Dia 05 mm, overall length 160 mm, chrome plated.

01 No.

67

Surgical Scissor

125 mm, one prong blunt and other pointed, standard.

01 No.

68

Claw hammer with handle

Forged, approximate weight 225 gm with wooden handle.

01 No.

69

Steel Ball

Steel Ball with a hook, diameter 19/20 mm.

01 No.

70

Steel Wire (Sitar String)

Steel, length 100 cm, thickness 24 SWG.

01 No.

71

Banana plug connecting wire

Standard with two way connection. Two red wire and two black.

02 sets

72

Crocodile Clips

Clips 38 mm, Plated, standard flexible wire 50 cm long. Each set two wire.

05 sets

73

Stainless steel electrode with cork

Rubber cork of axial length 25.5 mm, smaller face dia 17 mm, bigger face dia 25 mm, fitted to stainless steel electrodes of length 70 mm and thickness 02 mm. Both electrodes have 90 degree bent of length 10mm. (To fit into item No. 15 bell jar).

01 sets

74

Knife

100 mm x 1.5 mm, hardened steel, with wooden handle.

01 No.

75

Screw driver

100 mm long, hardened, with plastic handle dia. 20/25 mm.

01 No.

76

Bottle opener with cork
screw and screw driver

Standard, overall length 140 mm, with cork.

01 No.

77

Shaving Blade

Standard.

01 No.

78

Dissecting Needle

Standard, length 110 mm, with plastic handle.

02 Nos.

79

Iron filings

Packed in 15 dia vial.

20 g

80

Iron Nails

Length 38 mm, 15 SWG

10 Nos.

81

Iron Nails

Length 25 mm, 15 SWG

10 Nos.

82

Emery paper

Standard, 100 number.

1 sheet

83

Sand paper

Standard, 60 and 120 number.

1 sheet each

84

Candle

Size 200X15 mm.

02 No.

85

Filter Paper

Ordinary. Circular of dia. 100 mm

10 Nos.

86

Plastic Strip

Plastic strip 200 mm x 25 mm x 3 mm and one side pasted woolen cloth 100 x 25mm.

01 No.

87

Silk cloth

Size 200 mm x 200 mm.

01 No.

88

Woolen Cloth

Size 200 mm x 200 mm, dark colour.

01 No.

89

Thermocole sheet

Size 100 mm x 100mm x 25 mm.

01 No.

90

1 c.c. spoon

Specification :

HDPE, white, 1cm cubic and overall length 100 mm.

02 Nos.

91

Spring balance

A.B.S , open type, capacity 250 g graduation in steps of 10 g on one side and Newton's on the other side.

01 No.

92

Decimeter cube vessel

Transparent polystyrene. Inside dimension 100 mm x 100 mm x 100 mm top open, 9 lines at 1 cm distance on one side 100 equal 1 cm square on the other.

01 No.

93

Laboratory Stand

1) Boss head

2) Clamp

MS rod dia. 10 mm x 375 mm long, MS base, CI Boss head and aluminium clamp.

01 each

94

Sun dial

Plastic base dia. 100 mm-110 mm x 3 mm with graduation and base should be white milky colour.

01 set

95

Pulley with frame & Rod

Plastic pulley dia. 50 mm attached with frame 75 mm x 17 mm of MS 24 SWG and L type rod of dia. 6 mm, overall length 115mm bent at 15 mm at 90 degree.

02 Nos.

96

Aluminium wire and pointer

Aluminium wire 3 mm dia x 45 cm length and pointer.

01 set

97

Bimetallic strip

Frame - MS Rod, 6 mm dia. with MS and brass strips joined,

01 No.

98

Set of four resistors 5

ohm, 10 ohm

(2 Nos.) 20

ohm

15 mm x 15 mm x 125 mm with nichrome wire resistance, embedded in plastic case.

01 set

99

Circuit Board

Complete with plastic base, battery holder, bulb holder with bulb 3.2 V, switch, banana sockets with one bulb extra.

01 set

100

Measuring cylinder

Plastic, transparent with built in base, 100 mL graduation (min 1 mL).

01 No.

101

Plastic Boxes

1. 220 mm x125 mm x 85 mm.
2. 172/175 mm x130 mm x70 mm

1 each

102

Litmus paper

Red and Blue colour

5 booklet each

103

Plastic Funnel

Plastic, transparent top dia, 50 mm

01 No.

104

Micro Test Tube 4 mL

Borosilicate glass, diameter 10 mm x 45 mm height with rim.

10 Nos.

105

W Tube

Borosilicate glass, 2 mm thick x 8 mm dia. having length of arm 70-75 mm with wide mouth in one arm.

05 Nos.

106

China Dish

Outer diameter 70 mm/75 mm.

01 No.

107

Micro Spatula

Stainless steel 100 mm length.

01 No.

108

Forcep

Stainless steel 100 mm long pointed

02 Nos.

109

Micro Test Tube Brush

Soft hairs for 4 mL test tube cleaning.

01 No.

110

Tripod Stand

Height 100 mm cast iron top 7 cm x 7 cm x 7 cm triangle, legs dia 4 mm iron body.

01 No.

111

Pasteur Pippette

Low density poly ethylene (LDPE) capacity 3 ml with screw type and nozzle.

10 Nos.

112

Dispensing Bottle

Low Density Poly Ethylene (LDPE) capacity 15 ml

20 Nos.

113

Plastic Vials

.

High Density Poly Ethylene (HDPE), height 55 mm, diameter 15 mm.

15 Nos.

114

Micro Test Tube Stand

Acrylic Plastic moulded, size 100 mm x 27 mm x 20 mm 04 blind holes to hold
Micro Test Tubes depth of hole 15 mm.

02 Nos.

115

Rubber Balloons

5 small and 5 big (in a packs of 10)

01 packet

116

Cotton Thread

Reel in white colour.

01 No.

117

Wash Bottle

LDPE, capacity 125 mL.

01 No.

118

Petri dish

Soda glass dish outer dia. 80 mm x 25 mm depth.

01 No.

119

Beaker (50 mL)

Borosilicate glass, capacity 50 mL, height 56 mm, diameter 42 mm with rim.

01 No.

120

Watch glass

Soda glass, diameter 50 mm.

01 No.

121

Mirror/Lens stand

Wooden / Plastic mirror stand 120 mm 30 mm x 75 mm. Height with slot.

01 No.

122

Cotton Roll

Weight: 50 gm

01 No.

123

Single Holed cork

Standard, size no.7 hole 6 mm

02 Nos.

124

Plastic straw/glass tubes

130-150 mm and Dia.6 mm.

05 Nos.

125

Transparent plastic bag

Medium Sized 200 mm x 200 mm.

02 Nos.

126

Thick Black paper

10 cm x 10 cm

04 Nos.

127

Muslin cloth

15 cm x 15 cm

04 Nos.

128

Iodine solution

Packed in LDPE Dispensing bottle of 60 ml.

01 No.

129

Alum crystals

Packed in plastic container-50 gm

01 No.

130

Pressure table

It may include a piece of soft wood

(10 cm x 10 cm x 10/12 mm) with four holes (about 0.1 cm dia.) near four corners.

Provide for nails each of 8/10 cm length. The head of nails should be broad.

01 set

131

Wire Gauge

100mm X100mm with frame

02 Nos.

132

Compound Microscope (optional)

ISI Based microscope: Metal Body, overall height approx. 320 mm, base 125 mm x 200 mm. Achromatic good quality lenses.

Two Objectives: 10X & 45X. Two Eyepieces: 10X & 15X having coarse fine motion & fixed condenser.

01 No.

Visual Cards

Size 21 cm x 30 cm plastic coated card

133

Amoeba

Standard,

1 No.

134

Hydra

Standard,

1 No.

135

Spirogyra

Standard,

1 No.

136

Rhizopus

Standard,

1 No.

137

Bacteria

Standard,

1 No.

138

Yeast

Standard,

1 No.

139

Nostoc

Standard,

1 No.

140

Anopheles (mosquito)

Standard,

1 No.

141

Peel of leaf showing

Standard,

1 No.

stomata

142

Life cycle of silk moth

Standard,

1 No.

143

Stages in seed germination

Standard,

1 No.

144

Locomotion in earthworm and snail

Standard,

1 No.

145

Desert Plants

Standard,

1 No.

146

Aquatic Plants

Standard,

1 No.

147

Vegetative Propagation

Standard,

1 No.

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