

Class 6 Science / Chapter 6: Materials Around Us

Curiosity Grade 6 / Notes + Activities ke Jawab / Notes by Abhishek Sir

1. Material kya hai?

Hamare charo taraf ki cheezein (notebook, pen, bottle, table) alag-alag materials se bani hain: kaagaz, lakdi, kapda, glass, dhatu (metal), plastic, mitti. Jis padarth se koi object banta hai use material kehte hain. Ek object ek ya kai materials se ban sakta hai (pen: plastic + metal + ink) aur ek material se kai objects ban sakte hain.

Pottery: Bharat me 7000-8000 saal purani. Harappan sabhyata me pahiyen (wheel) par bartan, laal rang par kaale design. Pakai hui mitti ko terracotta kehte hain.

2. Grouping (Classification)

Cheezon ko common property (shape, rang, kadak/naram, chamak, material) ke hisaab se group me baantna classification kehlata hai. Fayda: padhna aur dhoondhna aasaan (jaise rasoi, kirana dukaan, medical store me cheezein group me rakhi jaati hain).

Material kaise chuna jaata hai?

- Property dekhkar aur kaam (purpose) dekhkar.
- Tumbler paani rakhta hai, isliye paani na sokhne wala, na gal-ne wala material chahiye (steel, glass, plastic). Kapda ya kaagaz nahi chalega.
- Alag sport ki gend alag material ki hoti hai kyunki bounce, size, kadakpan alag chahiye (tennis ball zyada uchhalti hai, cricket ball kadak).

3. Materials ki Properties

Property	Matlab	Example
Lustre (chamak)	Chamakdaar surface; aam taur par metals	Iron, copper, aluminium, gold, zinc
Non-lustrous	Chamak nahi	Kaagaz, lakdi, rubber, jute
Hard (kadak)	Dabana ya khurchna mushkil	Patthar, loha, brick
Soft (naram)	Aasani se dab ya khurch jaye	Sponge, eraser, candle, chalk
Transparent	Aar-paar saaf dikhta	Glass, paani, hawa, cellophane
Translucent	Aar-paar dikhta hai par dhundhla	Butter paper, frosted glass

Property	Matlab	Example
Opaque	Bilkul nahi dikhta	Lakdi, cardboard, metal
Soluble	Paani me ghul jaata hai	Cheeni, namak
Insoluble	Paani me nahi ghulta	Ret, chalk powder, buraada

Dhyan dene wali baatein

- Har chamakne wali cheez metal nahi hoti. Polish ya plastic/wax coating se bhi chamak aati hai ("All that glitters is not gold").
- Kuch metal hawa-paani se dull ho jaate hain; unki chamak taaaza kati sateh par dikhti hai.
- Hard aur soft relative hain: rubber sponge se kadak par loha se naram.
- Paani bahut cheezein ghula leta hai, isliye hamare sharir me iska bada role hai. Oxygen paani me ghulti hai, isliye machhli saans le paati hai.
- ORS ghar par: 6 chammach cheeni + aadha chammach namak + 1 litre ubla thanda paani.

4. Mass aur Volume, Matter

Zaroori definitions

- **Mass:** kisi object me padarth ki matra. Zyada bhaari = zyada mass. SI unit kilogram (kg); chhoti unit gram (g).
- **Volume:** object ne jitni jagah gheri ho. Units: litre (L), millilitre (mL); SI unit cubic metre (m^3). $1 m^3 = 1000 L$.
- **Matter:** jo jagah ghere (volume) aur jiska mass ho. Paani, ret, kankad, cup, hawa - sab matter hain.
- **Material** = matter ka wo type jo cheezein banane me use hota hai.

Likhne ke नियम: 7 kg (kgs nahi), 500 mL (m chhota, L bada), number aur unit ke beech space, symbol ke baad full stop nahi.

Ayurveda me 20 gun (properties): 10 jode vipreet gun jaise guru-laghu (bhaari-halka), hima-ushna (thanda-garam), mridu-kathina (naram-kadak), sandra-drava (thos-taral). Ye bhi classification ka ek prachin tareeka hai.

Trick / Yaad rakhne ka tareeka

- Transparent = T (Taras, saaf dikhe), Translucent = dhundhla, Opaque = O (Over, bilkul band).
- Matter = Mass + Volume (dono chahiye).

5. Activities ke Jawab

Q. Activity 6.1 - Cheezein aur unke materials (Table 6.1)

Ans. Table: Notebook - kaagaz; Pen - plastic + metal; Table - lakdi; Bottle - plastic/glass; Tumbler - steel/glass; Window - glass + lakdi; Shirt - kapda (cotton).

Q. Activity 6.2 - Objects ka grouping

Ans. Hum shape, rang, kadak/naram, chamak ya material kisi se bhi group kar sakte hain. Seekha: ek object alag materials se aur ek material kai objects me use ho sakta hai.

Q. Activity 6.3 - Tumbler kis se banta hai? Kapde ka tumbler kyun nahi?

Ans. Tumbler glass, steel, plastic, mitti, copper, kaanch se ban sakta hai. Kapda paani sokh leta aur paani nikalne dega, isliye paani rakhne ke liye nahi. Kaagaz ke bartan khana banane ke liye bhi theek nahi (gal jaata, jal jaata).

Q. Activity 6.4 - Gend ka bounce (Table 6.2)

Ans. Tennis ball: high; Cricket ball: low/medium; Hand exercise ball: low (naram, ghaas jaisa). Alag sports me alag bounce, size aur texture chahiye. Isliye cricket ball se tennis nahi khel sakte (kadak, bhaari, kam bounce).

Q. Fig. 6.4 ko kai tarah se group karo

Ans. Shape (gol, chaure), rang, material (plastic, glass, metal), kaam (khelne ki cheezein, rasoi ki cheezein).

Q. Sorting challenge (paper, cardboard, wood, chalk, copper wire, aluminium foil, brass, steel)

Ans. Lustrous: copper wire, aluminium foil, brass, bronze, steel. Non-lustrous: paper, cardboard, wood, chalk.

Q. Activity 6.5 - Hard ya soft (Table 6.3)

Ans. Brick - Hard (baked clay); Water bottle - Hard (plastic); Pillow - Soft (cotton/foam); Tumbler - Hard (steel/glass); Table - Hard (lakdi); Sweater - Soft (oon).

Q. Fig. 6.5 - A, B, C, D ki nature

Ans. A (Ghulan, deewar ke peeche) - Opaque; B (Sheeta, ped ke peeche) - Opaque; C (Sara, frosted glass ke peeche) - Translucent; D (Sheeta ka bhai, glass window se) - Transparent.

Q. Hide-and-seek: bacchon ne ye jagah kyun chuni? Band lakdi ki khidki se dikhta?

Ans. Deewar aur ped opaque hain, isliye wo chhup paate hain. Frosted glass se dhundhla dikhta hai. Band lakdi ki khidki se nahi dikhega kyunki lakdi opaque hai.

Q. Activity 6.6 - Classify (Table 6.4)

Ans. Transparent: glass tumbler, window glass. Translucent: butter paper, frosted glass.

Opaque: eraser, wooden board. (Paani transparent hai, par usme mitti ya doodh milane par

wo opaque ho sakta hai.)

Q. Activity 6.7 - Paani me ghulna (Table 6.5)

Ans. Sugar - ghulti hai (soluble); Salt - ghulta hai (soluble); Chalk powder - nahi ghulta (insoluble); Sand - nahi ghulti (insoluble); Sawdust - nahi ghulta (insoluble, tairta hai).

Q. Kya tel, sirka, shahad paani me ghulte hain?

Ans. Sirka aur shahad paani me mil jaate hain (soluble). Tel nahi ghulta, alag layer bana leta hai.

Q. Activity 6.8 - Kaun bhaari? (Water, sand, pebbles)

Ans. Aadhe bhare same cups me pebbles (C) sabse bhaari, phir sand (B), paani (A) sabse halka. (Order sahi hona zaroori nahi hai, wazan karke dekho, jiska zyada mass wo bhaari). Is property ko mass kehte hain.

Q. Do tumblers me paani ka level alag kyun?

Ans. Dono ki capacity same hai par unme paani ki matra (volume) alag hai. Jitni jagah paani gharegi wo uska volume hai. Jag me pani ka level alag hone se pata chalta hai ki volume alag hai.

Q. "Jug se paani bottle me poora kyon nahi daal paya?"

Ans. Kyunki thoda paani jug ki deewaron par chipka reh jaata hai, aur kuch ke baad bottle bhar jaati hai (uski capacity seemit hai).

6. Let us play - Answers

Q. 1. Find the companion (shabdon ko jodo)

Ans. Iron - Lustrous; Copper - Lustrous; Transparent - Glass / Bottle; Opaque - Wood; Solid - Iron/Wood/Plastic; Plastic - Bottle. (Jo cheezein ek property ya material share karti hain unhe jodo.)

Q. 2. Word-hub

Ans. Ye ek khel hai: 9 shabd grid me likho (lustrous, soluble, matter, mass, hard, soft, opaque, volume, translucent...), facilitator definition padhe, jo shabd match kare use tick karo. Jo pehle sab tick kare wo Hurray! bole.

7. Let us enhance our learning - Answers

Q. Q1. Kitchen ko behtar kaise sort karein?

Ans. Cheezein property ke hisaab se rakho: masale ek jagah, dal-anaaj ek jagah, steel ke bartan ek jagah, glass ek jagah, aur jo roz kaam aaye wo aage. Labels lagao.

Q. Q2. Unscramble aur match

Ans. (i) T R E M A T = MATTER - (b) jagah gharegi aur mass ho. (ii) U L S B E L O = SOLUBLE - (d) paani me poora mil jaaye. (iii) T N E R P A S N A R T = TRANSPARENT -

(a) saaf dikhe. (iv) $E R U S T L = LUSTRE$ - (c) chamakdaar sateh.

Q. Q3. Containers transparent kyon?

Ans. Taaki andar rakhi cheez bina kholey dikh jaaye, kitni bachi hai pata chale, aur kaunsi cheez hai ye pehchaan sake.

Q. Q4. True/False

Ans. (i) F - Wood opaque hai aur glass transparent. (ii) T. (iii) T. (iv) F - Apple matter hai kyunki wo jagah gheregi aur mass hai.

Q. Q5. Kursi ke liye material

Ans. (i) Kadakpan: loha, lakdi, stone, cement (loha sabse kadak). (ii) Halka: plastic, bamboo, lakdi. (iii) Sardi me zyada thanda na lage: lakdi, plastic, bamboo (loha aur patthar thanda lagta hai). (iv) Saaf ho aur naya jaisa dikhe: plastic aur loha. Sab properties mil kar lakdi/plastic achchhe hain.

Q. Q6. Kachre ke dibbe (food waste, tooti kaanch, kaagaz)

Ans. Food waste: plastic ya steel (geela kachra sah sake, saaf ho sake). Tooti kaanch: kadak dibba (metal/mota plastic) jo kaat na jaaye. Wastepaper: cardboard/plastic dibba. Dekhna: kadakpan, paani se kharaab na hona, saaf karna.

Q. Q7. Air aur wooden door

Ans. Option (i) transparent, opaque.

Q. Q8. Materials X aur Y

Ans. X: kadak aur paani me ghulta = cheeni ya namak (sugar/salt); ye hard hai. Y: naram aur paani me nahi ghulta = sponge, rubber ya aata; ye soft hai. Karan: X dabane par shape nahi badalta (hard), Y badal jaata hai (soft); X ghulta hai, Y nahi.

Q. Q9(i). Who am I?

Ans. (a) Lustre: metal (iron, copper). (b) Aasaani se dabne wala: sponge. (c) Kadak aur paani me ghulne wala: cheeni/namak ka crystal. (d) Saaf nahi dikhta: lakdi / frosted glass (opaque ya translucent). (e) Mass aur volume par dikhai nahi deti: hawa (air).

Q. Q9(ii). Apna Who am I?

Ans. Example: "Main paani me ghul jaata hoon, safed hoon aur khane me daalte hain. Main kaun hoon?" Answer: namak.

Q. Q10. Soluble aur insoluble jode

Ans. Soluble: (1) Sirka - paani, (2) Glucose - paani (shahad bhi paani me ghulta).

Insoluble: (1) Sarson ka tel - paani, (2) Gehu ka aata - paani.

8. Important Q&A (exam ke liye)

Q. Transparent, translucent aur opaque me antar (example ke saath)

Ans. Transparent: saaf dikhta (glass). Translucent: dhundhla (butter paper). Opaque: nahi dikhta (lakdi).

Q. Matter kya hai? Uski 2 properties

Ans. Jo jagah gharegi aur jiska mass ho. Properties: mass aur volume.

Q. Soluble aur insoluble kya hain?

Ans. Jo paani me ghul jaaye wo soluble (cheeni), jo nahi ghule wo insoluble (ret).

Chapter ka Naam (copy-paste)

Materials Around Us

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