Periodic table to colour in

A printable 118-element map. Start colouring with the instructions on page 2. Name: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H																	2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba	57-71	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	89-103	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og

Lanthanides 57-71	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
Actinides 89-103	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Columns = groups 1-18. Rows = periods 1-7. The two lower rows continue periods 6 and 7. Boxes show atomic number and symbol; atomic masses are intentionally omitted.

My colour / pattern key: Group 1 _____ Group 2 _____ Group 17 _____ Group 18 _____

Instructions, answers and next steps: redbridgetuition.co.uk/periodic-table-colouring-activity/

Colour with a purpose

You need: this pack, four light coloured pencils, a pen and a ruler. No textbook or chemical samples are needed.

Step	What to do	What to notice
1. Four families	Choose a colour or pattern for each: Group 1 metals, Group 2, Group 17 and Group 18. Shade their boxes on page 1.	Do not shade hydrogen as a Group 1 metal. Leave other boxes white for this activity.
2. Add a key	Record your colours. Add group numbers or patterns as well, so colour is not the only clue.	Groups are vertical columns; periods are horizontal rows.
3. Mark the first 20	Write G beside H, He, N, O, F, Ne, Cl and Ar. These are gases at 20°C and ordinary atmospheric pressure.	The other first-20 elements are solids at these conditions.
4. Find two liquids	Find Br (35) and Hg (80). Write L in each box: bromine and mercury are liquids at 20°C.	Being a metal does not always mean being solid. Do not assume every other element has a measured solid state.

A useful translation for UK school books

This table uses group numbers 1–18. Some UK school resources call Group 17 “Group 7” and Group 18 “Group 0”. Use the numbering shown by your teacher; these refer to the same columns.

Science note: a position in a family does not prove every property of a superheavy element. For example, do not label oganesson a measured room-temperature gas. This activity deliberately limits gas labels to the first 20 elements.

Explore the first 20 elements

Use your table. Give a reason when asked; naming a colour is not an explanation.

1. Which element has atomic number 12? Give its symbol.

2. Name the Group 1 metals among the first 20 elements. Why is hydrogen excluded?

3. Which first-20 elements are in Group 18?

4. Which first-20 elements are gases at 20°C?

5. Magnesium and calcium share a group. Do they also share a period? Explain.

6. A pupil says, “Every metal is solid at room temperature.” Use an example from this pack to correct them.

Check your coloured map

Your colours can be different. The element positions and chosen families should match this answer map.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H G																	2 He G
2	3 Li	4 Be											5 B	6 C	7 N G	8 O G	9 F G	10 Ne G
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl G	18 Ar G
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br L	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba	57-71	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg L	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	89-103	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og

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Columns = groups 1-18. Rows = periods 1-7. The two lower rows continue periods 6 and 7. Boxes show atomic number and symbol; atomic masses are intentionally omitted.

Key: pale orange = Group 1 metals; green = Group 2; pink = Group 17; blue = Group 18. G marks gases among the first 20 elements only. L marks bromine and mercury at 20°C.

Group 1 metals: Li, Na, K, Rb, Cs, Fr. Group 2: Be, Mg, Ca, Sr, Ba, Ra. Group 17: F, Cl, Br, I, At, Ts. Group 18: He, Ne, Ar, Kr, Xe, Rn, Og.

Explain, reflect, go further

Question	Answer and reason
1	Magnesium, Mg. Atomic number 12 means 12 protons in each magnesium atom.
2	Lithium (Li), sodium (Na) and potassium (K). Hydrogen is a non-metal, despite its position above them.
3	Helium (He), neon (Ne) and argon (Ar). They occupy the far-right column.
4	H, He, N, O, F, Ne, Cl and Ar. A gas label is about conditions, not simply location.
5	No. Magnesium is in period 3; calcium is in period 4. Both are in Group 2.
6	Mercury (Hg) is a metal and a liquid at 20°C. One exception is enough to disprove “every”.

Reflect: One idea I can explain now: _____ My next question: _____

Go further: activities, companion workbook details and updates

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IUPAC periodic table | Royal Society of Chemistry element data. School conventions vary: use the notes in this pack and your course materials.