Suggested Study Plan National 5 Physics

Exam Date – Wednesday May 21st 2026 at 1pm – 3.30pm

Allocate a week to each topic, if you start early you've got a bit more time! You must always write something down when you are studying. Use sharp pencils, rulers a good calculator and clean paper. **TURN YOUR PHONE OFF**. Make mind maps, bullet point, make flash cards, do past paper questions and check model answers, write out symbols, units, formula and rearrange. I'll try to put together some items for each week, but it is better if you can do this yourself so you can target your weaknesses.

Week	What to study	Formula	Things you need to get help with
1	Units, prefixes, formula sheet, symbols etc. **Waves**: definitions; formula; v,f,λ; period; diffraction diagrams; long & short λ	v=d/t, v=fλ, f=N/t, T=1/f	
2	**EM spectrum**: energy; uses; sources; detectors; v f λ, speed **Refraction of Light**: change in speed, direction and wavelength; normal, incidence & refraction angles; diagrams.	v=fλ, v=d/t	
3	**Electricity**: charge, voltage, current; ac/dc; charged particles in an electric field; Ohm's law; use of voltmeter and ammeter; potential dividers; components; transistor circuits; series & parallel current, voltage and resistance; power formulas; fuse ratings.	Q=It, V=IR, $V_2=(R_2/R_1+R_2)V_s$, $V_1/V_2=R_1/R_2$, P=IV, $P=I^2R$, $P=V^2/R$, P=E/t, $R_t=R_1+R_{2+...}$ $1/R_t=1/R_1+1/R_2+...$	
4	**Dynamics**, Vectors & Scalars; resultant at right angles; trig/Pythagoras/scale diagram; d=vt, average/instantaneous speed; v-t graphs; area under graph; acceleration from graph, experiment and calculations	d=vt, displacement=area, a=(v-u)/t, acceleration = gradient	
5	**Forces**, Newton's Laws, balanced/unbalanced forces; resolving forces; friction; weight & mass; terminal velocity	F=ma, W=mg	
6	**Energy**: conservation of energy; work done; potential energy; kinetic energy. Projectile motion: horizontal and vertical motions; graphs; satellites and projectiles	$E_w=Fd$, $E_p=mgh$, $E_k=1/2mv^2$ v=u+at,	
7	**Space**: current understanding; terms; satellites, geostationary, period vs height; challenges, risks & benefits; N3 spaceflight; weight on other planets; Cosmology: light year; age of universe; big bang; EM spectrum information; spectra	$E_k=1/2mv^2$ $E_h=cm\Delta T$, $E_h=ml$	
8	**Thermodynamics**: Heat energy and temperature; specific heat capacity; latent heat, change of state;	$E_h=cm\Delta T$, $E_h=ml$, P=E/t	
9	**Gas:** Pressure, kinetic model of gas, 3 Gas laws and experiments, Kelvin scale	p=F/A, $p_1V_1/T_1= p_2V_2/T_2$, 0K=-273°C	
10	**Radiation**, αβγ properties, ionisation and effects on atoms, dangers, activity, background radiation, absorbed dose…equivalent dose…weighting factor etc, safety limits, applications of radiation in medicine and industry, half-life experiments and graphs, nuclear fission & fusion.	A=N/t, D=E/m, $H=DW_r$, H'=H/t	