

Appendix 1: Science G—Weekly Subject List

Week	Subject
1	introduction to chemistry/atoms./molecules/compounds/mixtures/reactions
2	chemical states/air molecules/properties: physical and chemical/dissolving/solutions/contaminants
3	sorting substances/distillation/chromatography: paper and gas/centrifugation/electrolysis/solutions
4	atoms/nucleus/protons/electrons/shells/electrical charge/naming substances/periodic table/metals/metalloids/non-metals/noble gases
5	pure elements/compounds/shells/gaining and losing electrons/ ions: positive and negative/ ionic bonds/ionic compounds/ covalent compounds
6	nuclear reactions/radioactivity/radiation/history of atoms/rations/structure of atoms/chemical bonds
7	activation energy/reactivity/catalysts/reactions/Law of Conservation Mass/reaction types: displacement, decomposition, reversible/gas/ precipitates
8	oxidations/reductions/combustion/acids/bases/neutralization reaction/pH scale/indication
9	polymerization reaction/plastic/carbon: graphic and diamond/DNA/carbon and oxygen/carbon dating/metals/alloys/steel/matter
10	reactivity series/using gases/non-metals/chemical curiosities/mass spectrometer/micro-investigations
11	identifying substances/origin of elements/rocks/rock cycle/greenhouse effect/living chemistry/space/crystallization
12	chemistry in your body/history of chemistry/physics introductions/Big Bang Theory/atoms/elements/alpha particles/crystals
13	atoms/positive and negative charges/quarks/gluons/speed/velocity/acceleration/deceleration mass/momentum/force/newtons/crystals
14	kinds of forces/friction/Newton's Laws of Motion/work/joules/machines/energy
15	gravity/weight/air resistance/terminal velocity/centripetal force/center of gravity/precipitates
16	pressure/area/density/mass/volume/displacement/energy/kinds of energy/energy conservation/reversible reaction
17	fossil fuels/alternative energy/power/time/heat/state changes/heat vs temperature/heat energy: conduction, convection, radiation/matter
18	conduction/convection/radiation/absorbing heat/insulators/evaporation/waves/electromagnetic spectrum/steel
19	light/opaque/transparent/translucent/color mixing/reflecting light/scattering/internal reflection/refraction/carbon/nitrogen
20	sound/frequency/oscilloscope/amplitude/ultrasound/infrasound/echoes/sonar/sound vs light/electricity/insulators/static electricity/discharge/repelling and attracting/current electricity/chlorine
21	electric current/conductor/ battery/electrolyte/voltage/volts/AC/DC/circuits: series and parallel/components./circuit diagrams/magnets/poles/magnetic field/ magnetic field lines/electrical solutions
22	North Pole/electromagnetism/electromagnets/astrophysics/sun/earth's orbit/earth's moon/solar system/other moons/history of physics/galvanometer
23	biology/life/kinds of biologists/life processes/organisms/classification/division/phylum/class/order/family/genus/species/animal kingdom/animal names/vertebrates/invertebrates/plant kingdoms/angiosperms/gymnosperms/spores/electrolytes
24	animal cell/plant cell/cells/tissue/organs/organisms/mitosis/gametes/meiosis/zygote/stem cells/viruses/microbes/bacteria/protists/protozoa/algae/vaccination/electroplating
25	human body/skeletal system/muscles/tendons/antagonistic pairs/human brain/nervous system/neurons/reflexes/sight/hearing/touch/smell/taste/digestive system/food/oxygen/respiratory system/waste products/blood/flame test

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Week Subject

26	reproduction/chromosomes/genes: dominant and recessive/DNA/other animals/plants/meristems/stem/roots/leaves/flowers/photosynthesis/chlorophyll/respire/chromatography
27	plants/root hairs/xylem/phloem/vascular bundles/flower/seeds/spores/clones/runners/bulbs/sprouts/habitat/populations/ecosystem/niche/keystone species/carnivores/herbivores/food chain/pyramid of biomass/habitat destruction/pollution and waste/climate change/history of biology/sugar test
28	solar system/moon/galaxies/satellites/earth maps/seasons/leap years/day and night/moon phases/earth layers/magnetic earth/earth crust/faults/mountains/starch test
29	rocks/minerals/fossils/metals/mohs scale/fossil fuel/radiation/volcanoes/natural hot water/volcanic islands/monitoring volcanos/vitamin c/photochemistry
30	earthquakes/fault lines/focus/seismic waves/aftershocks/earthquake safety/tsunamis/atmosphere/ozone layer/air and ocean currents/photosynthesis
31	nitrogen cycle/carbon cycle/global warming/climate change/greenhouse gases/climates/rainforests/tropical grasslands/monsoons/testing fibers
32	tropical deserts/Mediterranean climates/temperate climates/polar regions/mountains/changing climates
33	weather/water/wind/clouds/thunderstorms/lightning/hurricanes/tornadoes/floods/droughts/freezing/heat waves
34	strange weather/weather forecasting/plant life/animal life/breathing/ecosystems/upsetting ecosystems/population
35	farming/organic farming/intensive farming/soil/soil cycle/crop rotation/weathering/erosion
36	river erosion/deposition/waterfalls/using rivers/ground water/springs/ice/glaciers/coast lines/tides/seas and oceans/fishing/over fishing/maps and lines