Reflecting on physics this year

Very Short Answers

On a scale of 1–10, where 1 is 'don't agree at all', and 10 is 'very much agree', how much do you agree with the following statements?

1. "I enjoy physics."
   3, 7, 3, 7, 4, 7, 4, 4, 7, 4, 7, 7, 8 5.5 ± 0.5

2. "I think that I am good at physics."
   6, 7, 1, 6, 4, 7, 5, 5, 5, 3, 7, 4, 5 5.0 ± 0.5

3. "I understand physics."
   3, 4, 2, 7, 6, 6, 5, 5, 5, 3, 7, 6, 7 5.0 ± 0.5

4. "I find physics difficult."
   8, 6, 9, 4, 8, 5, 6, 7, 8, 8, 5, 8, 4 6.0 ± 0.5

Short Answers

5. What did you enjoy most about physics this year?
   'Electricity experiments, ISA'; 'The jungle monkey experiment'; 'The jungle monkey experiment, Mr Lewis throwing water'; 'when experiments work'; 'mechanics'; 'help available outide class has been good, experiments that worked were also good'; 'particle physics was interesting, practicals are good if they work'; 'mechanics'; 'mechanics, work and power and trigonometry'; 'electricity topic'; 'mechanics'; 'mechanics'; 'mechanics'

6. What did you enjoy least?
   'exams, particle physics / waves'; 'Eheber'; 'particle physics – did not understand it, seemed illogical – I didn't feel like I truly understood it'; 'having to do notes from slideshows outside lesson because Mr Lewis wouldn't let us do it in lesson'; 'particles'; 'experiments that did not work'; 'electricity'; 'electricity'; 'particles and electricity – tests'; 'waves!!'; 'particles e.g. leptons and hadrons'; 'waves'; 'waves';

7. How have you found the courses? What were the hardest and easiest topics?
   'not very interesting – didn't relate particle physics to real life'; 'electricity hardest, particles easiest'; 'hardest: particles & electricity & waves, easiest: mechanics (due to maths)'; 'mechanics & particles were easy, waves were harder'; 'hard'; 'the electricity and waves in unit 1 were the hardest, mechanics the easiest'; 'not that interesting but useful, electricity hardest, mechanics easiest'; 'hardest: electricity & waves, easiest: mechanics & particles'; 'the courses vary e.g. electricity and particles I found difficult, however I enjoyed mechanics, work and power'; 'very difficult, electricity was the easiest'; 'mechanics, materials and waves are good, particles and electricity are the hardest'; 'the course was all right, mechanics easiest, waves & particles hardest'; 'all were difficult but that is just A-levels, mechanics easiest, waves hardest';

8. Were the exams and end-of-term practice tests a good measure of your learning? Why?
   'no, tests weren't very good, don't use real past papers as tests – takes away from number of past papers we can do before exams, don't do tests without letting us revise'; 'not really they made me look better than I am'; 'exams – good measure of learning, feedback given

and highlighted areas I was unsure of'; 'having tests in the first term and getting Us was not helpful'; 'yes'; 'yes they were: the short answers were very good, disliked writing questions on the exam – maybe more practice would help'; 'probably, showed I could do with working harder'; 'yes it showed me areas to improve'; 'yes they were because they let you know where you are aiming for'; 'yes, made you realize you had to work hard!'; 'no, exams only reflect the revision done not the quality of learning or how you learned'; 'they were a good measure of learning as they let me see how well I'm doing in the course'; 'yes but more practice papers needed'

9. Which practicals did you enjoy most / least? Do you think there should be more or less practical work?
'Rubens' tube great, no other physics experiment worked, more practicals: links to life (reality)'; 'loved the jungle monkey experiment, didn't like the electricity experiments'; 'I really liked the practical on the yard about excitation – helped me to understand. other than that, I didn't think practicals helped me gain an understanding'; 'all practicals with springs/loads/bouncing a tennis ball were boring, more practicals if it's interesting'; 'Rubens' tube I enjoyed, least – all electricity'; 'the Van der Graaf & Rubens' tube experiments were great, very interesting because of the fire! electricity was incredibly dull as none of them worked'; 'good amount of practicals, do one on a regular basis but not loads so you won't be able to learn everything in time'; 'most: Rubens' tube, light experiments, least: Hooke's law, pendulums' 'centripetal force, electricity and polarized light, I think there should be the same amount of practicals next year, as to me it seems to be a good balance – a practical will be needed in a double lesson!'; 'Rubens' tube, more practicals!'; 'the fire/music tube, less practicals but more effective better ones, ones that work'; 'practicals need to work better'; 'more practicals that work needed'

10. Is there anything you would like to change about the physics course in year 12? Anything you would add or take out?
'add links to real lefe with particles, make it more interesting! field trip!'; 'nothing on eheber!'; 'I thought slideshows were relied on too much, explanation was somtimes not given, more attempt to explain and make it easier to understand'; 'allow people to take their own notes in the lesson & give more questions and less lecturing'; 'get some proper equipment'; 'have more interacting in teaching: just reading powerpoints was not great, more questions within powerpoints and time to take down notes during class with teachers instead of at home would be good'; 'get some proper astrophysics in there and get away with electricity, get some proper equipment in'; 'proper equipment, less electricity, more practicals'; 'I don't think anything needs to be changed in the course, it seems to also be friendly to students who don't take maths A-level'; 'get rid of waves!!'; 'take course with less practicals so you can spend more time on the theory and take it slower'; 'more practicals'; 'more applied examples'

Longer Answers

11. What do you understand the word 'science' to mean? You have been studying it for 6 years now—why bother?
'how things work / world study, chem/bio is interesting in detail'; 'science is the applied version of mathematics and it gives me a factual understanding of the world'; 'science is the study of how and why things work: a better understanding of the world'; 'science is studying how the world works and experimenting to prove theories – these can be used to predict what may happen in the future, to improve health & living standards & to explain (potentially) why we're here'; 'experimenting to find out new stuff about our planet, to get a good job'; 'a study of the world and universe around us, based on facts and theories to be proved to

help us understand the world and our place in it, so I can understand the would in which we live'; 'science to me is learning and understanding the world around and is the most applicable subject in school to actual knowledge and getting ready for the world of work and thinking for yourself'; 'technology, experimenting, finding out new things, certain parts of science interest me and is a big part in the career I am for'; 'science to me means theory and tests however lots of fun in practicals and demonstrations'; 'understanding about how everything around you works, interesting and I think it would be a bit naive not to know anything about it'; 'sicence allows for improvement and discovery and further understanding of the world around us and the worlds around our worlds. Without science we would have nothing. To improve in intelligence we need to improve science'; 'a way of understanding things'; 'an understanding of how everything works and why and a way of describing this'

12. Scientists often tell us things about the world that we should not otherwise have thought. For example, that we are closely related to chimpanzees, that Africa and South America used to be joined together, and that the universe is expanding. How do you think scientists reach these unlikely-sounding ideas? 'theory, evidence, experiment, proof'; '–'; 'through extensive research and studying'; 'through experimenting with educated guesses based on previous findings'; 'experimenting and years of studying then analysing the results to come up with a conclusion'; 'theories and facts found and proved, as well as hypothesizing and finding facts to prove them'; 'years and years or research built upon years and years of other people's research to tell everyday people the truths of life that they can reject and attribute to God if they so choose. Scientists try and push the boudaries to actually understand our world so we can better it and find new things'; 'research, experiments, testing theories'; 'scientists ideas by knowledge and experiments and asking others to approve these predictions'; 'from researching and experimenting?'; 'due to pure curiosity... wanting to know everything'; 'crazy ideas and minds'; 'abstract minds'