

Academic year 2009/2010

November

Week 46

SC1 2 grade 8. We begin with our own experiments.

SC1 and SC2 grade 9 We discuss the algorithm language for programming.

PHYSICS grade 7. We solve problems. We are planning to study how the density of liquids and gases can be measured?

PHYSICS grade 8. We meet Mr. Urban, a person who survived a lightning strike. We are discussing what a battery is. Voltage describes the electric field potential energy. We are discussing what an electrical current is and how can we compare different currents. We discuss how we can measure current strength and voltage.

CHEMISTRY grade 9. We discuss how to use the concept of 1 mole in order to find out the molecular formula.

Week 47

SC1 2 grade 8. Own research continues.

SC1 and SC2 grade 9 We build a simple robot with four simple moves.

PHYSICS grade 7. We discuss the various options for changing a body's speed. Force is a physical quantity. We discuss a force's direction and how this direction can be represented. We discuss how to measure forces.

PHYSICS grade 8. We discuss what an electric circuit is and how we can represent its electrical components. We discuss what physical quantities can affect the electric current in conductors. We are planning an investigation.

CHEMISTRY grade 9. We discuss how to use the concept of 1 mole in order to find out the percentage composition of elements. We discuss how we can use a balanced chemical equations to predict the masses of reactants and products.

Week 48

SC1 2 grade 8. Own research continues.

SC1 and SC2 grade 9 We build a simple robot that reacts to sound.

PHYSICS grade 7. We discuss weight and the normal force. How can we calculate the weight? We discuss when the normal force is zero. How does this affect humans, animals and plants?

PHYSICS grade 8. We begin with our own research. We discuss what a superconductor is. We will watch a film "Electricity" by UR about possibilities to create superconductors and how to use them.

CHEMISTRY grade 9. We are planning an investigation about how much water there is in copper

sulphate compounds.

December

Week 49

SC1 and SC2 grade 8. Own research continues.

SC1 and SC2 grade 9 We build a simple robot that reacts to light.

PHYSICS grade 7. We discuss the reason for friction, attachment point and direction of friction forces. We discuss the different types of friction. Advantages and disadvantages for friction. How would the world be like without friction? We are planning an investigation about what factors may affect frictional forces.

PHYSICS grade 8. We are continuing with our investigations. What factors affect the current strength in a conductor?

CHEMISTRY grade 9. We investigate how much water there is in the crystalline copper sulphate compound.

Week 50

SC1 and SC2 grade 8. Own research continues.

1. How does the viscosity and surface tension affect the form of a fluid drop?

By Iris Holmberg, Mette Desta and Emilia von Hellen

2. How does X-rays affect a plants growth?

By Matias Miller, Oscar Olin

3. Photoelements.

By Kim Kousa, Philemon Wolfram

4. Deodorant - can we trust commercials?

By Ella Vainio, Linda Rasmussen

5. How the environment affects the amount of malic acid in apple?

By Daniel AlperI, Jesse Grönroos

6. How much antibiotics are in meat?

By Miroslav Knuutinen, Donatella Statovci

7. How the temperature affects the amount of carbon dioxide in various carbonate drinks?

By Nico Knuutinen, Miroslav Ravattinen, Martin Mora Iskander

8. Measuring the speed of light in the kitchen.

By Otto Fazer, Max Thelen

9. How shampoo affects the hairs elastic coefficient?

By Alexandra Kuhlefelt, Michelle Riska

10. Mobile phone speaker.

By Oscar Lindh

SC1 and SC2 grade 9 We continue to build a simple robot that reacts to light.

PHYSICS grade 7. We are investigating what factors can affect frictional forces.

PHYSICS grade 8. We are continuing with our investigations. What factors affect the current strength in a conductor? What parameters determines the resistance of a conductor?

CHEMISTRY grade 9. We discuss how chemistry works in everyday life.

Science students are on a visit to France, Clermont l`Hérault to organize and plan a joint research project.

Week 51

SC1 and SC2 grade 8. Own research continues.

SC1 and SC2 grade 9. We continue to build a simple robot that follows A pattern the floor.

PHYSICS grade 7. We evaluate our investigations. We present our vision of what would happen if friction would disappear.

PHYSICS grade 8. We continue our investigations. We discuss what a shortcircuit is. We discuss electrical power. We solve problems relating to this. We are planning an investigation about a heat spiral effect. We carry out our planned experiment.

CHEMISTRY grade 9. We discuss about cosmetics.

From week 51 we will also follow events in the French school - Lycée Jean Moulin in Pézens, which we now cooperate with.

CHEMISTRY (2). Laboratory work on the chemical reaction between acids and bases. What is an acid? What is a base? We discuss the Brønsted definition of an acid and a base.

**WE HAVE WINTER HOLIDAYS FROM 21.12.2009 TO 07.01.2010.
WE WISH ALL SCIENCE FRIENDS A HAPPY NEW YEAR 2010.**

January

Week 2

PHYSICS grade 7. We discuss the atmospheric pressure. We discuss different possibilities on how to measure the atmospheric pressure. We acquaint ourselves with E. Torricelli 's barometer. We are planning an investigation about how the altitude affects the atmospheric pressure and how the pressure affects a liquid's boiling point.

CHEMISTRY grade 8. We discuss electrolysis. Why do electrolytes conduct electricity? What are anions and cations? We are going to plan and conduct an investigation about the electrolysis of copper chloride.

PHYSICS grade 9. We discuss what magnetism is. History and myths about magnetism. We are investigating permanent magnets and a magnetic fields main characteristics.

SCIENCE 1 grade 8. We are discussing about forensic science. We classify different types of crimes. We discuss how knowledge in physics, chemistry and biology helps forensic scientists to solve various crimes. N.B. If a teacher with her students wants to come and experiment with us then please contact us via e-mail: [ingvar.stal @ edu.hel.fi](mailto:ingvar.stal@edu.hel.fi)

SCIENCE 2 grade 9. We discuss the different types of spectra. We investigate the origin for those different types of spectra. We discuss energy levels and potential wells. We discuss photons and their energy.

Lycée Jean Moulin i Pézens, France

CHEMISTRY. What is an oxidant? What is a reducer? What are oxidation and reduction reactions (electronic transfer)? Lab work on oxidation and reduction reactions.

Week 3

PHYSICS grade 7.. We continue our planed investigations. We discuss why airplanes fly. We discuss the origin of pressure under water and Archimedes force. We choose essay headlines.

CHEMISTRY grade 8. We plan and conduct an investigations about the electrolysis of copper sulphate. We choose essay headlines about what electrolysis is used for.

PHYSICS grade 9. We discuss Ørsted's experiment. We discuss the origin for earth's magnetic field and electromagnets. We investigate which factors affect magnet's demagnetization.

SCIENCE 1 grade 8. We discuss different types of fingerprints. We will study methods for finding and taking fingerprints.

SCIENCE 2 grade 9. We meet students from IB who will tell us about their studies at Mattlidens gymnasium. Our guests are Jonas Westerlund and Erik Roos.

Lycée Jean Moulin i Pézens, France

CHEMISTRY. Our investigation of oxidation and reduction reactions continues.

Week 4

PHYSICS grade 7. We discuss diffusion and physical properties of molecules. We compare different states of matter.

CHEMISTRY grade 8. We discuss the reactivity series of metals. We discuss chemical reactions with metals. Oxidation reactions. We are planning an investigation about the oxidation of magnesium.

PHYSICS grade 9. We discuss Faraday's experiment. We discuss electromagnetic induction. We discuss the alternating current and different transformers. We are planning an investigation about the characteristics of different transformers.

SCIENCE 1 grade 8. We are discussing about blood groups and what blood contains. We carry out blood tests that determines the blood group and the Rh-factor of the blood. (NB! We use a synthetic blood in all labs).

SCIENCE 2 grade 9. We investigate the levels of carbon dioxide in clouds using a spectrometer.

Lycée Jean Moulin i Pézens, France

CHEMISTRY. We investigate an acid-base titration using a conduct metric method.

Week 5

PHYSICS grade 7. We investigate the transition process from one state of matter to another.

CHEMISTRY grade 8. We discuss displacement reactions and solve problems using the reactivity series of metals.

PHYSICS grade 9. We discuss self-induction. We discuss how an electric motor is constructed. We discuss the production of electricity and solve problems.

SCIENCE 1 grade 8. We continue to investigate different blood groups and what blood contains.

SCIENCE 2 grade 9. We discuss how the spectrometer is used in astronomy. We discuss the Doppler effect.

Lycée Jean Moulin i Pézens, France

CHEMISTRY. Our acid-base titration investigation using a conduct metric method continues.

February

Week 6

CHEMISTRY grade 7. We discuss what subjects chemistry investigates and what a chemical reaction is. We familiarize ourselves with laboratory equipment in chemistry and practice how to use the Bunsen burner safely.

CHEMISTRY grade 8. We discuss what organic chemistry investigates. We discuss the hydrocarbon compounds and how we can prove what is and what isn't organic. We discuss what alkanes are and their properties.

PHYSICS grade 9. We discuss Atomic and Nuclear Physics. We get to know the different methods used to detect particles.

SCIENCE 1 grade 8. We continue to investigate different blood groups and what blood contains.

SCIENCE 2 grade 9. We discuss how different types of lasers work.

Lycée Jean Moulin i Pézens, France

CHEMISTRY. Lab titration using an oxydant-reducer reaction (colorimetric method).

Week 7

CHEMISTRY grade 7. We discuss different separation methods in chemistry.

CHEMISTRY grade 8. We discuss what alkenes are and their properties.

PHYSICS grade 9. We discuss different models for the atom. We discuss the E. Rutherford's experiment.

SCIENCE 1 grade 8. We continue to investigate different blood groups and what blood contains. We have three guests - three teachers from Borgå.

SCIENCE 2 grade 9. We discuss how the environment affects the development of living nature.

Lycée Jean Moulin i Pézens, France

Winter holidays

Week 8

Winter holidays

Lycée Jean Moulin i Pézens, France

Winter holidays

March

Week 9

CHEMISTRY grade 7. We discuss what chromatography is. We plan and carry out own investigations about the colours used to produce coloured pencils.

CHEMISTRY grade 8. We discuss what alkynes are and their properties. We discuss what alcohols are and their properties. We plan own investigations about alcohols.

PHYSICS grade 9. We discuss what radioactivity is. We discuss about H. Becquerel's and M. Curie's discoveries. We discuss about different types of radioactive decay.

SCIENCE 1 grade 8. We investigate different organic and synthetic fibres. We use the microscope to create profiles for different fibres.

SCIENCE 2 grade 9. We discuss about inheritance and different types of reproduction.

Lycée Jean Moulin i Pézens, France

Winter holidays

Week 10

CHEMISTRY grade 7. We plan and conduct own investigations on how to separate salt and sand. We discuss how the water's temperature affects compounds solubility in water.

CHEMISTRY grade 8. We conduct own investigations about alcohols. We discuss how to produce alcohols. We choose essay headlines about alcohols.

PHYSICS grade 9. We discuss decay of atomic nuclei, the half-life and chain reactions. We discuss applications of radioactivity. We discuss about L. Meitner discoveries.

SCIENCE 1 grade 8. We discuss what the immune system is and how white blood cells work. We plan own investigations on white blood cells.

SCIENCE 2 grade 9. We discuss about cloning and genetic engineering. We will watch the documentary "Vision of the future: the intelligent revolution".

Lycée Jean Moulin i Pézens, France

Titration of Mohr's salt using potassium permanganate solution

Week 11

CHEMISTRY grade 7. We discuss the symbolic language of chemistry. We discuss the difference between elements, compounds and mixtures.

CHEMISTRY grade 8. We work with selected essay about alcohol.

PHYSICS grade 9. We discuss the basis of A. Einstein's Theory of Relativity.

SCIENCE 1 grade 8. We investigate the cell components of blood using a microscope and create blood profiles for different people.

SCIENCE 2 grade 9. We discuss what fossils are, what we can learn from fossils. We discuss Earth's geological timescale.

Lycée Jean Moulin i Pézens, France

We continue titration of Mohr's salt using potassium permanganate solution

Week 12

CHEMISTRY grade 7. We will learn how chemists name chemical compounds. We will learn how chemists write down chemical reactions using symbols.

CHEMISTRY grade 8. We discuss which drugs are legal and illegal. We discuss how alcohol can affect your health.

PHYSICS grade 9. We discuss the different areas of astronomy. We discuss how astronomers observe the Universe.

SCIENCE 1 grade 8. We discuss the Elisa test, a method for finding the HIV virus in blood. We will have a guest from Slovenia, Natasa Glodez.

SCIENCE 2 grade 9. We discuss Earth's geological timescale. We discuss different theories of evolution. We will have a guest from Slovenia, Natasa Glodez.

Lycée Jean Moulin i Pézens, France

We continue with titration.

Week 13

CHEMISTRY grade 7. We discuss how atoms differ from each other. We draw a model which

describes the structure of atoms.

CHEMISTRY grade 8. We present our projects about alcohol.

PHYSICS grade 9. We discuss about galaxies, their birth, development and types. We familiarize with E. Hubble's discoveries.

SCIENCE 1 grade 8. We familiarize how to identify different glass. We form groups to solve "crimes".

SCIENCE 2 grade 9. We discuss Ch. Darwin's Theory of Evolution and different evidence which support this theory.

Lycée Jean Moulin i Pézens, France

We continue with titration.

April

Week 14

CHEMISTRY grade 7. We familiarize with the Periodic Table of Elements.

CHEMISTRY grade 8. We present our projects about alcohol.

PHYSICS grade 9. We discuss about stars, their birth, development and types. We familiarize with Hertzsprung - Russell Diagram.

SCIENCE 1 grade 8. We collect different evidence from the "crime scene".

SCIENCE 2 grade 9. We are going to watch the film "The Genius of Charles Darwin".

Lycée Jean Moulin i Pézens, France

We continue with titration.

Week 15

CHEMISTRY grade 7. We discuss the physical properties of metals and non-metals. We familiarize the place for metals and non-metals in the periodic table.

CHEMISTRY grade 8. We discuss what carboxylic acids are.

PHYSICS grade 9. We discuss the Solar system.

SCIENCE 1 grade 8. We discuss what DNA is and how scientists analyze DNA. We will plan experiments to investigate different DNA sequences and use it to solve crimes.

SCIENCE 2 grade 9. We continue to watch the movie "The Genius Of Charles Darwin".

Science students from grade 8 will visit Herning, Denmark in order to present their part in the joint research with Slovenia, Denmark and France about x-rayed radish seeds and to summarize a joint conclusion to the project.

Week 16

CHEMISTRY grade 7. We discuss the chemical properties of acids. We familiarize us with different methods to identify acids.

CHEMISTRY grade 8. We discuss different uses of carboxylic acids. We are going to plan an investigation about the common properties of carboxylic acids.

PHYSICS grade 9. We will watch the movie "Wonders of the Solar system".

SCIENCE 1 grade 8. We are going to prepare for an experiment where we investigate different DNA sequences.

SCIENCE 2 grade 9. We discuss the topic "Science versus religion". We prepare a short presentation on why it is important for students to know about the theory of evolution.

Week 17

CHEMISTRY grade 7. We investigate pH values of acids. We prepare an investigation about chemical properties of acids.

CHEMISTRY grade 8. We investigate common properties of carboxylic acids.

PHYSICS grade 9. We discuss the Big Bang Theory.

SCIENCE 1 grade 8. We investigate different DNA sequences from three samples.

SCIENCE 2 grade 9. We preparer a short presentation on why it is important that students know about the theory of evolution.

May

Week 18

CHEMISTRY grade 7. We investigate the chemical properties of acids.

CHEMISTRY grade 8. We investigate esters.

PHYSICS grade 9. We discuss the Big Bang Theory.

SCIENCE 1 grade 8. We investigate different DNA sequences from three samples.

SCIENCE 2 grade 9. We discuss why it is important that students know about the theory of evolution.

Week 19

CHEMISTRY grade 7. We perform tests on the chemical properties of acids.

CHEMISTRY grade 8. We investigate esters.

PHYSICS grade 9. We discuss the Big Bang Theory.

SCIENCE 1 grade 8. We discuss the different perspectives of DNA analysis.

SCIENCE 2 grade 9. We discuss the current scientific worldview.

Week 20

CHEMISTRY grade 7. We perform tests on the chemical properties of bases.

CHEMISTRY grade 8. We use titration to determine content of C-vitamin in ordinary juice.

PHYSICS grade 9. The students start with their final coursework.

SCIENCE 1 grade 8. We discuss the development of geometry. We watch the film "Building The Great Pyramid". We discuss issues surrounding the film.

SCIENCE 2 grade 9. The students start with their final coursework.

Week 21

CHEMISTRY grade 7. We perform tests on the chemical properties of bases.

CHEMISTRY grade 8. We discuss how knowledge of chemistry used in everyday life.

PHYSICS grade 9. The students continue with their coursework.

SCIENCE 1 grade 8. We investigate the ancient Egyptian measurement system. We compare modern mathematics language with ancient Egyptian mathematical language. We acquaint ourselves with Pythagora's Theorem which it was known in ancient India.

SCIENCE 2 grade 9. The students continue with their coursework. Science Day for primary school.

Week 22

HAPPY SUMMER! WE WILL MEET AGAIN ON 16th AUGUST 2010!

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