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COVER PAGE AND DECLARATION

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Changes in Science Education – Assignment

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a) Describe Important Concepts Learned from Assigned Reading

- What is Science ?
- Scientific Language
- Attitudes towards Science Education

How to use Science for children?

- Importance of learning science

b) Explain and Elaborate on the Utilization of Key Concepts Learned, at and within Workplace Contexts

- Who is involved in Utilization
- How to use Science with primary learners in a classroom?.
- a lesson plan based on age

c) Predict and/or enumerate Potential Challenges Faced in Implementing these concepts at Workplace

Introduction

Primary Science : supporting children's learning is a free course conducted by the Open University called openlearn University. This course talks about the scientific knowledge and information for primary stage children. The course has focused on many points and helps to understand what is actually the role of science help us in our career to help primary students and how we can support them.

When we think about the word science, all we think is ,its hard or its for clever people and sounds difficult and confusing for both adults and young learners .Science has also changed over the years, because a theory is based both on experimenting and observing by scientists and finalized as a theory to help people with a good understanding but according to years ,every theory can be changed the way how people see it or experiment it.

a) Science is understand of natural and social world following a systematic methodology based on evidence. Natural science are based on empirical evidence such as Physics, Chemistry and Geography and social science are based on everything that are related to man and society such as Sociology, Anthropology, Archeology and psychology.

The Scientists are people who have exceptional knowledge on science and acquired certain information where they collect and use evidence to research and set theories after many experimenting, observing in order to share that knowledge with the world. Two of the world's most famous scientist can be introduced as Isaac Newton (1623-1727 Law of gravity) and Albert Einstein (1879-1955 theory of Relativity).

Children are always creative and very curious so its important that we approach them with a knowledge in terms of small and big ideas because by using step by step from small ideas they can have a better knowledge about science in the future. Adults should reach children with smaller ideas in order for them to have a little bit of understand what it is and its for children to spend time learning about it and finding and being curious to find big ideas through these steps.

Scientific language can also be confusing for both adults and children because same words may contain different meanings. Children will find it difficult to explain certain ideas though they use scientific words so its always important to learn, observe and talk through to have a better understanding by exploring their ideas. In order to help a child with better understanding , the adult or the teacher should have the scientific language knowledge too and help children use the language in study sessions in order to have a good understanding and eventually practices them to build up their understandings and to express their own ideas.

Attitudes towards science take different paths the way we see it because it can define as feelings ,beliefs and values and can depend on many reasons and from different places. Children get confused when introduced to new

scientific concepts . Constructivist theory explains that children do have an idea about how things work and these can depend on by their own experiences or through their own family backgrounds.

How can we teach science to children? Science is not something that can be taught, its more about experiencing and experimenting because science is all around us. When it comes to children, Children from newborn to age of 6 is the age range where children's early childhood stage is referred. And age 6 to 12 is called Primary Learners here children overcome the early childhood phase and stepping towards the schooling phase .in this phase from age 6 to 12 children face many changes in them because they grow rapidly and it's the science of nature. This is the age where children's behavior develops along with their bodies and become more aware, more sensible and cope with success and failure at the same time. This is why its important to teach science to young children at this age because it helps children to encourage themselves to love science where they will have opinions both positively and negatively but to ensure that negativity will not lurk in them for a long time. By letting children be adventurous and allow them to take risks which reinforce the mentality of development in them. Through role play can also enrich scientific skills and competence because it push children to ask questions, plan, scheme and think to achieve the goal. Helps them in analysing , understanding evidence to arrive where they want. Science activities also provide opportunities to develop various skills such as communicating skills and co-operating competence. Understand the relationship between science and life by learning what scientists have experimented, invented or predicted in this world where we live.

All these qualities will be developed in a Primary learner if the student is open to science knowledge and techniques below for teachers or Educators can use to keep up the interest in children to learn science. some are,

- Pictures – by using pictures or diagrams can give an understanding on what's happening in that certain picture without language skills or questioning.
- Sorting – sorting activities can also help children identify the science in it such as float or sink using heavy objects and light objects.

When it comes to encouraging science education for children ,there are many materials that available to start with but what most important is not the product or the final answer but the process and how the activity pulls out the curiosity of the children to communicate and collaborate during the process.

b)First the teacher should have a better understanding on the concept on what she or he is going to share with the students. When we talk about a teacher ,a teacher should have many qualities in order to interact with children ,specially be positive and understand that every child is not the same and to respect each one fairly. Be very collaborative with children, and be open to criticism. Be adaptable to different methods, environments ,methods and approaches and have lot of patience.

Classroom plays a huge part when it comes to teaching. It always doesn't have to be a classroom but a specific environment where the student are able to learn something. This will be the main environment where children interact orally and cognitively while working on a planned lesson or program to acquire information. Setup of the classroom and how teacher choose the materials for the certain lesson is very important because that will be the first impression of a child when the child enters a certain environment.

I will be teaching children for the age of 6 (primary learners) about Float and Sink. I will communicated children with these simple questions such as What is todays topic? What's going to happen? Does children have any questions before the lesson regarding the topic?

Along with these questions I will start to explain children things and ways, the science behind it and make it interesting through a practical activity where children get to experience .discuss and valuate their own ideas with the fellow companions.

Teachers lesson plan

Class – 1st class

Age group – 6 years

Subject - Science

Lesson Title – Float or Sink and why?

Objectives – Students will observe different types of materials and start investigating then should make and test predictions about different objects that can float or sink and have a better understand.

Materials – using a bowl filled with water and different materials such as wood, stones, metal spoons, feathers, plastic and etc

Main skills – Observing

Purpose – Its important to understand and observe and learn why it happens and how it happens and opening up to new things and predicting what will happen.

Activity – Discussing with children why some objects sink and why some object float. Can explain children using the term ‘heavier than water’ or ‘lighter than water’ where objects that are heavier than water will sink and objects that are lighter than water floats. Then by taking different items, start the experiment where children observe each item one by one at a time placing in the bowl full of water to see if it floats or sinks. -later children can record the results on which item has floated and what item has sunk. Questions such as how does fish swim in the water can be a startup question for children to predict and discuss more and where children can research for more information regarding the topic.

“If we knew what it was we were doing, it would not be called research, would it?” – Albert Einstein

Inbetween a lesson children should have the opportunity to ask questions and talk freely on his or her own opinion on the certain things and the teacher should be able to not respond immediately but give a little help by encouraging the child to use their own science knowledge to predict new things that can happen because Small minds are always curious and want to learn more if the students are interested in the lesson.

c)There are many challenges face when it comes to science. Teachers who teach science or not expertise of science or scientists so they basically acquired the science knowledge to educate youngers but teachers may have lack of teaching experience where it can lead to lack of professional training and developmental sessions. Lack of materials in certain schools or learning centers will make teachers uncomfortable to teach. lack of learners interest in the subject can make challenging for the teacher to interest the learner. Children will fear to experiment and take risks . Lack of support of parents.

Conclusion

When supporting children’s Primary learning in science its important to understand what children’s opinions on science and what they think about it because each children’s opinion differs from one to another. Science should also be very engaging and interesting to primary children and help children to be curious to predict more theories in the future. Science knowledge should also be adaptable to each age group because the science knowledge can be misleading or confusing if big ideas being used to explain primary learners about science and its vocabulary because it is primary children’s first step towards their skill to plan , deduce and produce.

References

Isaac Newton
Albert Einstein

https://www.researchgate.net/publication/27464158_Enhancing_Science_Education_for_Young_Children_A_Contemporary_Initiative