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## **2006 -2007 Science Curriculum for the Diocese of Charleston**

### **Kindergarten**

- Life Science
- Physical Science
- Earth Science
- Inquiry

### **First Grade**

- Life Science
- Physical Science
- Earth Science
- Inquiry

### **Second Grade**

- Life Science
- Physical Science
- Earth Science
- Inquiry

### **Third Grade**

- Life Science
- Physical Science
- Earth Science

- Inquiry

**Fourth Grade**

- Life Science
- Physical Science
- Earth Science
- Inquiry

IRM Objectives for Grades 5 – 8

**5 – 8**

- Life Science
- Physical Science
- Earth Science

Fifth Grade – Inquiry

Sixth Grade – Inquiry

Seventh Grade – Inquiry

Eighth Grade – Inquiry

**Glossary**

## **PHILOSOPHY OF CATHOLIC EDUCATION**

### **Diocese of Charleston, SC**

WE BELIEVE that a philosophy of Catholic education begins with faith. God, in creating us, gifted us with life, became one of us in Jesus, and in the Person of the Spirit awaits our response to this unconditional love. Jesus remains within the human community witnessing and sharing the Good News in every age and with all people. We return God's love by sincere response to conscience and by membership in the church. It is from this perspective that the educational ministry of the Catholic community flows.

WE BELIEVE that Catholic education begins with life in the heart of the family. Parents, the primary educators, seed and nourish values deeply human, and deeply spiritual. Affirmed, treasured, and supported by the loving witness of Christian faith communities, the child continues a lifelong response to God's love through involvement in the academic, cultural, social, and civic concerns of daily life.

WE BELIEVE that the Catholic school exists to teach the mandate of Jesus: "Love one another as I have loved you". This is the goal of all Catholic education. The school community, in sharing a global vision within an atmosphere designed to celebrate and practice love of God and neighbor, is the most effective means available to the Church for the education of youth. This vision motivates students to grow academically, physically, culturally, socially, and spiritually. Among the values prized in the Catholic school are self-worth, self-discipline in the search for a moral way of life, and appreciation for our American heritage. With deep concern for their sisters and brothers in faith, young people in the Catholic schools form their personal response in truth, peace, justice, and love.

## **PHILOSOPHY OF SCIENCE, GRADES K – 8**

### **Diocese of Charleston**

Science is a body of knowledge concerning God-given natural phenomena and a disciplined, sequential process for verifying knowledge, clarifying values, and resolving problems accordingly.

Science education consists of three essential components: Knowledge, skills, and application of both scientific information and gospel values in resolving problems. Knowledge refers to the facts, theories, and principles of science and to the related teachings of the Church. The skills or processes of science include activities embodied in the scientific method, which encompasses the ability to formulate and state hypotheses and to evaluate them by experimentation or observation. Application is the use of science content, processes, and gospel values not only in work but also in personal, social, and political decision making.

Science teachers are responsible for developing students' confidence in their ability to understand how things work according to natural principles and how this relates to Church teachings.

Students must develop a basic understanding of science and technology in order to become responsible and effective Catholic adults. As future adults they will be required to make decisions concerning social, technological, medical, and environmental problems that will impact their community and other communities in the world.

**SCIENCE GOALS, GRADES K – 8**  
Diocese of Charleston

1. Become aware of the value system of the Catholic Church concerning the relationship between religion and science.
2. Develop the science process skills of observing, measuring, classifying, exploring, recording, predicting, inferring, hypothesizing, investigating, experimenting, reporting, decision making, and valuing.
3. Gain knowledge of major facts and concepts in science with related Church teachings.
4. Develop and strengthen communication skills in the science area.
5. Provide for the consistent application of thinking skills.
6. Demonstrate the ability to approach problems and to solve them in a systematic way.
7. Recognize that societal issues may result from the application of science and technology.
8. Make value decisions related to self, society, and environment.
9. Develop an awareness of and appreciation for careers in the field of science.

## **General Safety Reminders For The Science Classroom**

The science classroom/laboratory is one of the three areas considered to require the highest standard of care in education, because there is a higher propensity for serious accidents to occur than in normal classrooms. Also, the equipment used and experiments tried can be potentially dangerous. Thus teachers are required to exercise a high standard of care. This care demands an intense and constant supervision by teachers. Science teachers must consider three aspects of supervision: ADEQUATE INSTRUCTION, DUE CARE, and the USE OF SOUND, MATURE JUDGEMENT. The student must be instructed properly in correct use of equipment and warned of inherent dangers of lab activities.

### **SUGGESTIONS FOR TEACHERS**

1. Assure that equipment is appropriate for the age level of the students.
2. Check to see that equipment is properly maintained.
3. Instruct students in the proper use of equipment.
4. Demonstrate to students what to do.
5. Document safety procedures, review them with students, and post them in the lab. The sign should be in a conspicuous place.
6. Make sure the activity is appropriate for the age level, the lab facilities, and the particular group you are teaching. Balance the danger of the activity with the benefit of the activity.
7. Arrange labs so you can see all work stations at once.
8. Instruct students on how to “turn off” an experiment safely at any stage, e.g., during fire drills.
9. Never leave the lab when students are working.
10. Do not give students permission to work in an unsupervised lab.
11. Enforce the constant use of safety glasses when appropriate.
12. Avoid use of alcohol burners. Use hot plates instead.
13. If liquid spills occur, wipe immediately to prevent falls.
14. Report any injuries or accidents, even minor ones, to the office right away.
15. Familiarize students with first-aid, fire-drills, and other emergency procedures. Post instructions for these procedures in a prominent place.

## SUGGESTIONS FOR STUDENTS

1. Wear safety goggles when your teacher instructs you to do so or whenever chemicals are being heated or mixed.
2. Do not perform any unauthorized activities during the laboratory period.
3. Read each activity carefully after it is assigned and before it is begun. Also, read each CAUTION and be prepared for unexpected problems.
4. When you are heating a test tube or when a chemical reaction is occurring inside a test tube, never point the tube at yourself or at any other person.
5. Always be careful when handling jars, beakers, test tubes, flasks, glass tubing, mirrors, glass plates, or any other glass objects.
6. If any acid or base is spilled on your clothing, on your skin, or anywhere else, tell your teacher immediately so that injury and/or damage may be prevented.
7. Be careful whenever any sharp instrument is being used.
8. Stay at your work station at all times unless instructed by the teacher to leave.
9. Speak quietly to your partner so that teacher directions can be heard at all times.
10. Only taste, smell, or touch any substance when instructed to do so.
11. Never touch equipment until told to do so.
12. Precautions should be taken for loose clothing and long hair.
13. Do not touch the face, mouth, eyes, and other parts of the body while working with plants, animals, or chemicals. After each activity, wash your hands.
14. Take appropriate precautions when using fire and/or heat sources.
15. Report any injuries or accidents, even minor ones, to your teacher right away.

## IRM

To ensure the continuity of the curriculum throughout the grade levels, each objective has been labeled as **introductory, reinforcement, or mastery**. The introductory level introduces the process or concept to the student. There is no need for in depth study at this level as students are just becoming familiar with the ideas. Reinforcement depends upon the previous grade levels introducing the objective. At this level, the students build on what they already know and expand their understanding of the objective. By the mastery level, students should have a basic understanding and the ability to explain this information in detail. Most mastery will occur in high school, in higher level science classes. It is imperative that the objectives be covered in a sequence that ensures success at the next level.