

Physical/Earth Science

STANDARD ONE

The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches, can create learning experiences that make these aspects of subject matter meaningful for students and can link the discipline(s) to other subjects.

KNOWLEDGE

The teacher knows how to apply major concepts, assumptions, debates, processes of inquiry, and ways of knowing that are central to the discipline(s) he/she teaches.

The teacher has a multicultural perspective of his/her discipline(s).

The teacher knows how to relate higher disciplinary knowledge to other subject areas.

The teacher understands how students' conceptual frameworks and their misconceptions of an area of knowledge can influence their learning.

Evidences

The teacher knows about the National Research Council's (NRC) National Science Education Standards.

The teacher knows the central concepts or current theories of physical science, which include, but are not limited to:

- structure of atoms,
- structure and properties of matter,
- chemical reactions,
- motions and forces,
- conservation of energy and increase in disorder,
- interactions of energy and matter.

The teacher knows central concepts or current theories of earth science, which include, but are not limited to:

- structure of the earth system,
- energy in the earth system,
- geochemical cycles,
- origin and evolution of the earth system and solar system,
- origin and evolution of the universe.

The teacher knows how to incorporate unifying concepts and processes such as:

- systems, order, and organizations,
- evidence, models and explanations,
- change, constancy, measurements,
- evolution and equilibrium,
- form and function.

The teacher knows the history and nature of science, including:

- science as human endeavor,
- nature of scientific knowledge,
- historical perspectives.

The teacher knows the importance of science in personal and social perspectives:

- personal and community health,
- population growth,
- natural resources,
- environmental quality,
- natural and human induced hazards,
- science and technology and local, national, and global challenges.

The teacher knows appropriate mathematical skills and concepts related to physical and earth science such as:

- appropriate arithmetic skills including percentage, fractions, decimals, ratios, and proportions,
- measurement skills including linear, volume, mass and temperature, using English and metric (International System) units,
- probability of an event occurring,
- algebraic skills including solving and graphing equations,
- trigonometric functions to solve problems,
- scientific notation and significant digits.

The teacher knows how to collect, analyze and interpret scientific data to:

- set up experiments with dependent and independent variables,
- use simple statistical procedures,
- create and analyze graphs and charts.

The teacher knows how to store, maintain, and dispose of chemicals safely.

The teacher knows how to store and maintain science equipment properly.

The teacher knows central concepts of science inquiry.

The teacher knows the relationship between science and technology.

The teacher knows proper lab safety procedures and techniques.

The teacher knows how to design and facilitate laboratory and field experiences appropriate for

physical/earth science.

The teacher has knowledge of educational services for students with special needs.

DISPOSITIONS

The teacher has enthusiasm for the discipline(s) he/she teaches and helps connect it to everyday life.

The teacher realizes that subject matter knowledge is not a fixed body of facts, but is a complex and ever-evolving construct of ideas.

The teacher accepts multiple perspectives.

The teacher values interdisciplinary teaching and learning.

Evidences

The teacher is enthusiastic about teaching physical and earth science.

The teacher displays curiosity, openness to new ideas, and skepticism that characterize science.

The teacher is committed to continued professional development in the sciences.

The teacher accepts that the body of scientific knowledge is ever-changing and non-dogmatic.

The teacher accepts that science is an orderly approach to explaining and predicting natural phenomena.

The teacher appreciates diverse perspectives in scientific problem-solving.

The teacher appreciates the importance of real world connections to physical and earth science concepts.

The teacher appreciates the importance of historical contributions toward the development of scientific theories.

PERFORMANCE

The teacher keeps abreast of new ideas and understandings in his/her discipline.

The teacher approaches the discipline critically and evaluates new claims and interpretations in the field.

The teacher effectively uses multiple representations and explanations of disciplinary concepts that capture key ideas and links them to students' prior understanding.

The teacher represents and uses a variety of viewpoints, theories, "way of knowing," methods of inquiry, and standards of evidence characteristic of the discipline.

The teacher engages students in generating knowledge and testing hypotheses according to the methods of inquiry and standards of evidence characteristic of the discipline.

The teacher includes multicultural perspectives in his/her lessons and conveys to learners how knowledge is developed from the vantage point of the culture.

The teacher creates interdisciplinary learning experiences that allow students to integrate knowledge, skills and methods of inquiry from several subject areas.

The teacher ensures that what is taught and what is learned is accurate.

The teacher communicates effectively through reading, writing, speaking and listening, and assists students in doing the same.

Evidences

The teacher uses mathematics as the precise language of communication and problem-solving in science.

The teacher attends professional meetings or workshops related to physical or earth sciences.

The teacher reads current journals or publications in physical or earth sciences.

The teacher selects instructional materials that reflect current theory and valid scientific content.

The teacher plans appropriate activities/field experiences to teach the physical/earth science concepts.

The teacher uses and teaches the inquiry method to facilitate learning of scientific concepts.

The teacher engages the students in guided and independent problem-solving activities on individual, group and community levels.

The teacher challenges the students to develop higher order thinking skills related to physical/earth science concepts.

The teacher helps students make connections between physical/earth science and other sciences.

The teacher helps students make connections between physical/earth science and other curriculum areas.

The teacher models and teaches proper lab safety procedures and techniques.

The teacher emphasizes contributions to the body of scientific knowledge of individuals from all segments of society.

The teacher teaches physical/earth science concepts accurately and addresses common misconceptions.

The teacher provides opportunity for students to collect, analyze and interpret data using appropriate technology such as graphing calculators, microscopes, pH meters, calculator-based laboratories and probes, colorimeters, and computer software.

The teacher stores, maintains and disposes of chemicals safely.

The teacher stores and maintains science equipment properly.

The teacher applies knowledge of current trends and issues in general education and special education in the science classroom.

STANDARD TWO

The teacher plans curriculum appropriate to the students, to the content, and to the course objectives.

KNOWLEDGE

The teacher understands principles of curriculum design and knows how to plan lessons, units, and courses of study.

The teacher knows how to apply interdisciplinary approaches to curriculum design.

The teacher recognizes the continuum of learning within the K-12 curriculum of the disciplines(s) he/she teaches.

The teacher knows how to teach students to communicate effectively through reading, writing, listening, and speaking.

The teacher knows how to ask questions to stimulate discussion as well as creative and critical thinking.

The teacher knows how to use various instructional technologies to address individual and group needs.

The teacher knows how to construct and appropriately use a variety of measures, such as observations, tests, and performance-based assessments, to assess student growth and development.

Evidences

The teacher knows how to use/apply scientific inquiry methods.

The teacher knows the elements of the “learning cycle” as related to science concepts (experimentation, concept development application).

The teacher knows historical contributions and current developments in physical/earth science.

The teacher knows appropriate language, research skills, and technical writing skills for physical/earth science.

The teacher knows how to integrate curriculum within the sciences, as well as with other curriculum areas.

The teacher knows how to use multiple assessment techniques.

The teacher knows how to build connections between physical science and earth science concepts and community issues.

The teacher knows about the National Research Council's (NRC) National Science Education Standards and National Council of Teachers of Mathematics (NCTM) Curriculum and Evaluation Standards for School Mathematics and knows how to use these to plan curriculum.

The teacher knows how to involve students in a variety of investigative methods and problem-solving strategies which develop physical/earth science concepts as related to their environments.

The teacher knows methods for linking applications of mathematics and physical/earth science to students' prior knowledge.

The teacher knows how to document scientific information accurately.

The teacher knows how to question students in a manner that causes them to support and clarify their scientific ideas orally and in writing.

The teacher knows how to build connections between physical/earth science and career decisions.

The teacher knows how to adapt academic, career, and social curricula for all types of exceptional learners.

The teacher knows how to adapt oral and written communication to the needs of the student.

The teacher knows how to use effective strategies for collaboration with other professionals and how to participate with families, students and others in the development of individualized education plans/family service plans/transition plans for students.

The teacher knows how to plan for and link current developmental and learning experiences and teaching strategies with those of the next educational setting.

The teacher knows how to use task analysis and error pattern analysis to determine how to revise curriculum and instruction.

The teacher knows how to use assessment information to establish goals and objectives that are appropriate for an individual student.

The teacher knows how to collect, document, and analyze performance information through systematic observations and recordings of student learning, behavior patterns, and responses in the areas of social, developmental, functional, academic, and/or vocational behaviors.

The teacher knows how to develop formal and informal alternative types of assessments (e.g., portfolio assessment, curriculum-based assessment).

The teacher knows how to analyze students' individual interests, abilities, and learning styles.

DISPOSITIONS

The teacher is willing to respond with different approaches until students succeed.

The teacher is disposed to be a learner about organization, presentation, and assessment of content.

The teacher is inclined to use a variety of resources.

The teacher is open to and appreciates multiple perspectives of the disciplines and of the students.

The teacher is willing to explore and use technology as an instructional tool in the classroom.

The teacher is committed to improving practice based on a variety of assessments, both formal and informal.

The teacher is committed to lifelong learning.

Evidences

The teacher is willing to use a variety of instructional strategies and materials to increase students understanding of physical/earth science.

The teacher is willing to use multiple assessment techniques consistent with physical/earth science.

The teacher is willing to participate in professional development related to physical/earth science.

The teacher is open to innovative curriculum strategies that strengthen physical/earth science programs.

The teacher is willing to work with other faculty members for vertical and horizontal alignment of the science curriculum.

The teacher is willing to develop and use integrated science curriculum in an interdisciplinary approach.

The teacher shows enthusiasm in helping students learn science concepts.

The teacher is committed to keeping abreast of current concepts, methods, and technology in physical and earth sciences.

The teacher is willing to admit there is a limitation to his/her knowledge base and is willing to say 'I don't know'.

PERFORMANCE

The teacher plans lessons, units, and courses of study that are appropriate to the students, to the content, and to single discipline or interdisciplinary course objectives.

The teacher adapts the curricula to accommodate individual student abilities and needs.

The teacher evaluates and utilizes teaching resources and curriculum materials for comprehensiveness, accuracy, and usefulness.

The teacher develops and uses curricula that encourage students to see, question, and interpret ideas from diverse perspectives.

The teacher effectively integrates the communication skills of reading, writing, listening and speaking into all curricula.

The teacher asks questions to stimulate discussion as well as creative and critical thinking.

The teacher uses technology, as appropriate, to improve learning and instruction.

The teacher constructs and uses a variety of assessment techniques to assess student growth and development.

The teacher uses feedback and assessment to improve practice.

The teacher provides opportunities for students to acquire the skills necessary to become lifelong learners.

Evidences

The teacher integrates other science disciplines with physical and earth science concepts.

The teacher uses mathematical procedures and concepts to analyze data.

The teacher assesses the students' knowledge of physical/earth science concepts by using a variety of assessment methods.

The teacher uses a minimum of 25% of student contact time for hands-on/laboratory activities.

The teacher provides students with science assignments that allow for a wide range of solutions.

The teacher models and teaches scientific inquiry methods.

The teacher uses the elements of the "learning cycle" to develop physical/earth science concepts (experimentation, concept development, application).

The teacher uses appropriate technology to collect and analyze data through the “Inquiry Method.” [For example: air track, optics lab, electronic sensing devices, inelometer, electronic balance, computers, calculator-based laboratory (CBL), probes, the graphing calculator.]

The teacher uses appropriate scientific research and technical writing skills.

The teacher uses historical perspectives when discussing physical/earth science concept development.

The teacher links application of physical/earth science to prior knowledge.

The teacher uses assessment techniques to evaluate the effectiveness of the science program.

The teacher uses assessment information to establish goals and objectives that are appropriate for an individual student which requires the ability to communicate assessment results and integrate assessment data from others when preparing individualized plans for students with disabilities.

The teacher plans and implements developmentally and individually appropriate curriculums and instructional practices based on knowledge of individual students, the family, the community, and curriculum goals and content.

The teacher identifies educational, developmental, functional, vocational, and social outcomes for students with a diverse cognitive, motor, and/or social/behavioral needs at various ages.

The teacher cooperatively develops and evaluates an individualized education program/individualized family service plan/individualized transition plan.

The teacher develops lesson plans and adapts curricula, materials, and methods for average and diverse students [e.g., drugs, poverty, guns].

The teacher infuses speech skills into academic areas as consistent with mode or philosophy espoused and ability of the student who is deaf/hard of hearing.

The teacher selects media and technology appropriate to instructional goals and objectives and utilizes assistive technology needed by students with vision, hearing, motor, or other disabilities.

The teacher involves students in self-evaluation of products by providing students with information about performance results for the purpose of developing self-evaluation skills and supporting progress and by other means.

The teacher modifies tests for students with disabilities.

The teacher modifies the physical environment to ensure maximum performance on tests for students with disabilities.

The teacher collects, documents, and analyzes performance information through systematic observations and recordings of student learning, behavior patterns, and responses in the areas of social, developmental, functional academic, and/or vocational behaviors.

The teacher selects and administers assessment instruments and procedures based on the purpose of the assessment being conducted and in compliance with established criteria and standards.

The teacher involves families as active participants in the assessment process.

The teacher modifies a student's program as indicated by results of various types of evaluations, e.g., task analysis, error pattern analysis, curriculum-based assessments, and similar tools that allow for comparison of current performance with criterion outcomes.

The teacher develops and uses formative and summative program evaluation to ensure comprehensive quality of the total environment for children, families, and the community (especially for early childhood educators).

The teacher teaches for generalization of skills and transfer of knowledge by students and assisting them to develop learning strategies and independent study behaviors.

STANDARD THREE

The teacher plans instruction based upon human growth and development, learning theory, and the needs of students.

KNOWLEDGE

The teacher knows concepts of human growth and development.

The teacher can evaluate and know how to apply appropriate techniques and strategies based on different learning theories.

The teacher knows how to evaluate and use a variety of materials to support different instructional strategies.

The teacher understands how students' physical, social, emotional and cognitive development influence learning, and applies these factors when making instructional decisions.

The teacher is aware of expected developmental progressions and ranges of individual variation within each domain (physical, social, emotional and cognitive); the teacher can differentiate levels of readiness for learning and understand how development in any domain may affect performance in another domain.

The teacher understands the importance of peers to intellectual development.

The teacher knows how to find information and services to support students.

Evidences

The teacher knows age appropriate physical/earth science activities, content, and terminology.

The teacher knows developmental stages of moving from concrete to abstract concepts in physical/earth science.

The teacher knows how to use a variety of science instructional materials and techniques to support different learning styles.

The teacher knows how to use/apply scientific inquiry methods.

The teacher knows how and when to introduce and use science process skills such as observation, classification, interpretation, data collection and analysis.

The teacher encourages students to use their individual strengths to demonstrate and communicate to peers their understanding of scientific concepts.

The teacher knows how to use age appropriate technology to enhance science instruction and to address student learning styles.

The teacher knows how to build connections between previous experiences and physical/earth science classroom instruction.

The teacher knows how to create and modify physical/earth science lessons to address student needs.

The teacher knows how to recognize and develop student potential in science and technology.

The teacher knows theories of student learning and their applications in physical/earth science.

The teacher knows how to make science instructional decisions based on results of a variety of science assessment activities.

The teacher knows how to develop concepts pertaining to individuals with exceptionalities; pre-, peri-, and post-natal development and the developmental consequences of stress and trauma; the development of mental health; and the importance of supportive relationships.

The teacher knows techniques for crisis preventions.

The teacher knows how to provide students with frequent response opportunities, appropriate practice, and corrective feedback during all phases of instruction.

The teacher knows how to use resources, aids, and materials for teaching students with special needs.

The teacher knows and understands how exceptionalities and medications may affect behaviors and educational, vocational, social, and psychological status at various age levels.

The teacher has an understanding of peer coaching skills.

The teacher knows and understands indicators of exceptionalities, curricular approaches, learning styles, and special counseling needs of students with exceptionalities.

The teacher knows how to use community resources and allied health professionals which may be utilized by students and families and how to make referrals and collaborate with community program personnel.

DISPOSITIONS

The teacher is willing to provide and maintain a positive classroom environment.

The teacher believes that all children can learn at high levels and persists in helping all children achieve success.

The teacher accepts the responsibility to create an environment that motivates students to learn by building on their strengths and interests.

The teacher appreciates individual variations among students, shows respect for their diverse talents and abilities, and is committed to helping them develop their self-confidence and competence.

The teacher is willing to find and use different teaching materials, teaching techniques, and strategies to meet the learning needs of students.

The teacher recognizes that all students are capable of sharing knowledge.

Evidences

The teacher believes that all students can be successful in a science-rich environment.

The teacher is willing to use a variety of science activities, technologies, and techniques to allow for individual differences.

The teacher is confident in using different science teaching techniques including laboratory exercises and field work.

The teacher has a positive attitude and enthusiasm for science teaching which motivates students to question and research ideas.

The teacher is willing to identify personal attitudes and behaviors that may affect student behavior and the classroom environment.

The teacher believes that all students can learn at high levels and persists in helping all students achieve success including students with exceptionalities.

The teacher is committed to allowing students with exceptionalities to participate in ALL classroom activities where safety is not a factor.

The teacher is willing to use assistive technology.

PERFORMANCE

The teacher applies concepts of human growth and development to classroom instruction.

The teacher varies instruction using different learning techniques and strategies as appropriate for his/her students and the content.

The teacher selects, procures, and maintains appropriate materials to support different instructional strategies.

The teacher stimulates student reflection on prior knowledge, links new ideas to familiar ones, and makes connections to students' experiences.

The teacher provides students with opportunities for active engagement, for testing of ideas and materials, and for assuming responsibility for shaping their learning tasks.

The teacher provides opportunities for both individual and group learning.

The teacher finds and uses information and services to support students.

The teacher flexibly applies appropriate learning theories for individual students.

The teacher creates an environment which motivates students to learn by building on their strengths and interests.

Evidences

The teacher provides a non-threatening learning environment in science.

The teacher encourages all students to share knowledge and scientific insights.

The teacher uses appropriate instructional techniques to engage students in problem solving situations related to science.

The teacher applies science instructional techniques to lead students from concrete to abstract thinking.

The teacher uses multiple assessment tools to evaluate student science understanding.

The teacher collects and displays evidence of students' science achievement.

The teacher develops and uses science interest surveys to encourage and enhance the student learning process.

The teacher uses indigenous samples (rock, minerals and soils, etc.) in illustrating concepts.

The teacher encourages and models the skills of science inquiry both in the classroom and in the field.

The teacher provides opportunity for collection and qualitative and quantitative analysis of scientific data.

The teacher uses questioning techniques that allow for evaluation of the students' grasp of the scientific concepts.

The teacher provides real world problems for students to apply science concepts including local and global science issues.

The teacher helps students become aware of contributions to the field of physical/earth science by representatives from diverse populations.

The teacher applies concepts of human growth and development to classroom instruction, including application of typical and atypical child development theories in learning situations in the context of the family and the community.

The teacher uses or adapts learning techniques/strategies as needed for students with exceptionalities, providing opportunities for high success rates in each stage of learning, grouping students appropriately for learning, and facilitating family/child interactions as appropriate for optimum learning.

The teacher selects, procures, and maintains appropriate materials, devices, and aids for students with exceptionalities.

The teacher assists students in developing independent study behaviors.

The teacher makes appropriate referrals to community health and social services.

The teacher plans appropriate physical laboratory arrangements and activities in the science classroom observing safe laboratory procedures.

The teacher implements basic health, nutrition, and safety management practices, including specific procedures for students of various ages and with various exceptionalities regarding illness and communicable diseases.

STANDARD FOUR

The teacher exhibits human relations skills which support the development of human potential.

KNOWLEDGE

The teacher is familiar with students, the communities from which they come, and other factors which shape their outlook, values, and orientation toward schooling.

The teacher understands how students' learning is influenced by individual experiences, talents, prior learning, as well as language, culture, family, and community values.

The teacher understands the importance of treating others with respect and dignity.

The teacher knows how to communicate effectively with multiple audiences.

Evidences

The teacher knows about careers which use physical/earth science concepts.

The teacher knows about barriers and biases related to careers in physical/earth science.

The teacher knows how to use individual improvement plans to modify science lessons for students with special needs.

The teacher knows motivational techniques to encourage students with low self-esteem in science.

The teacher recognizes controversial issues in physical/earth science.

The teacher knows how to apply family systems theory and knowledge of the dynamics, roles, and relationships within families and communities as they affect the science classroom.

The teacher knows how to facilitate the integration of students with exceptionalities into the regular science classroom.

The teacher knows how to use interdisciplinary interaction and the ability to deliver and interpret treatment plan information.

DISPOSITIONS

The teacher respects, accepts, and support ALL students.

The teacher appreciates the importance of effective communication.

The teacher is committed to the expression of democratic values in the classroom and in school.

Evidences

The teacher is open to listening and discussing opposing points of view relative to physical/earth science issues.

The teacher is sensitive to community and cultural attitudes toward physical/earth science issues.

The teacher is sensitive to gender or cultural attitudes toward achievement in science.

The teacher is willing to modify science equipment and activities for special needs students.

The teacher is willing to sponsor extra-curricular activities such as science contests, clubs, or fairs.

PERFORMANCE

The teacher promotes positive interpersonal relationships among student/parents/guardians, and the community.

The teacher expresses empathy and warmth in interpersonal relationships.

The teacher treats all others with the same respect and dignity with which he/she expects to be treated.

The teacher communicates effectively with diverse populations among students, parents/guardians, peers, and community.

The teacher creates an environment which nurtures self-confidence, self-respect and competence.

The teacher considers the development of character, aspiration and civic virtues in making instructional decisions.

Evidences

The teacher provides opportunities for students to explore career options in physical/earth science.

The teacher influences the environmental consciousness of the community in a positive manner.

The teacher modifies science equipment and activities for special needs students.

The teacher uses individual improvement plans to meet the needs of science students.

The teacher advises and encourages students to study science every year during high school.

The teacher presents opportunities for students to engage in meaningful dialogue related to controversial/ethical issues in physical/earth science.

The teacher models the roles that teachers, other professionals, and parents assume in a collaborative relationship.

The teacher models affective, positive behavior appropriate to specific circumstances.

The teacher demonstrates conflict resolution skills.

The teacher creates an appropriate environment to increase student self-awareness, self-control, self-reliance, and self-esteem.

The teacher models effective communication skills, including speaking, writing, listening, and nonverbal skills.

The teacher teaches the students to be their own advocates.

STANDARD FIVE

The teacher works collaboratively with school colleagues, parents/guardians, and the community to support students' learning and well being.

KNOWLEDGE

The teacher understands the importance of reflecting on practice to improve instruction.

The teacher knows how to translate, evaluate, and apply current education research.

The teacher understands legal obligations as represented by statute, regulation, school board directive, court decision, or other policy.

The teacher understands the process of change.

The teacher understands schools as organization within the larger community context.

The teacher understands the importance of family/guardian involvement.

The teacher understands how student groups function and influence people and how people influence students.

Evidences

The teacher knows what community resources are available to be used to enhance physical/earth science studies.

The teacher knows how to communicate about science curriculum and issues with a wide range of stakeholders.

The teacher knows the school procedures for science field trips and laboratory safety.

The teacher knows how to network with other science professionals and the community.

The teacher knows how to collaborate with K-16 colleagues to maintain a coherent science curriculum.

The teacher knows how to develop a plan for acquiring needed science equipment.

The teacher knows assurances and due process rights related to assessment, eligibility, and placement of students who are culturally and/or linguistically diverse.

The teacher knows how to use stress management skills.

The teacher knows how to use interagency collaboration in planning behavior interventions and of the roles of the variety of community services, agencies, and professionals who support students with diverse cognitive, motor, and/or social/behavioral needs and their families.

The teacher knows how to plan for involving parents in the instructional process.

The teacher knows how to involve parents and students in the establishment of behavioral programs, self-recording, and self-management.

The teacher knows how to encourage and assist families to become active participants in the educational team.

The teacher knows how to respect parents' choices and goals for students and communicate effectively with parents about curriculum and student's progress.

DISPOSITIONS

The teacher is committed to research, reflection, assessment, and learning as an ongoing process.

The teacher appreciates the need for change in a dynamic organization.

The teacher believes that he/she can make an important contribution to enhancing the education of students and to school improvement.

The teacher is willing to collaborate in school-improvement activities.

Evidences

The teacher is willing to share science expertise with colleagues.

The teacher realizes the importance of interacting with the community in the promotion of science education.

The teacher is willing to be actively involved with extracurricular science activities.

The teacher appreciates that science learning is a continuous process that affects the entire community.

The teacher believes that what he/she is doing in science education is important to the community.

The teacher is concerned with the students' safety in all science activities.

PERFORMANCE

The teacher reflects on his/her teaching to improve instruction.

The teacher utilizes research to improve instruction.

The teacher assumes responsibility for his/her own professional development.

The teacher fulfills his/her legal obligations as represented by statute, regulation, school board directive, court decision, or other policy.

The teacher works collaboratively for student and school improvement.

The teacher seeks and uses human, material, community, and financial resources to improve student learning and to improve the school.

The teacher is an advocate for student learning and school improvement.

The teacher develops and maintains a professional presence and maintains a professional growth plan.

Evidences

The teacher uses community resources to enhance physical/earth science studies.

The teacher involves stakeholders in the development of the physical/earth science program.

The teacher actively seeks funding to support a laboratory-based science program.

The teacher follows state and district policies and science professional standards regarding field trips and laboratory safety.

The teacher attends science workshops and conferences.

The teacher collaborates with K-16 science colleagues to maintain a coherent science curriculum.

The teacher supports extracurricular science activities for students.

The teacher participates in planning for acquiring needed science equipment for the classroom and laboratory.

The teacher reads and critically applies research and recommended practices for effective management of teaching and learning.

The teacher participates in professional organizations.

The teacher adheres to the profession's code of ethical conduct and the ability to identify ethical and policy issues related to educational, social and medical services for children and their families.

The teacher demonstrates communication, consultation, collaboration, and problem-solving skills that can be used to develop instructional and management procedures for students.

The teacher participates appropriately as a member of a transdisciplinary team in activities related to individualized instructional and related programs for a student.

The teacher communicates options for programs and services at the next level and assists the family in planning for transition.

The teacher assists families in identifying their resources, priorities and concerns in relation to their student's development.

The teacher involves families in assessing planning for individual students, including students with special needs.

The teacher implements a range of family-oriented services based on the family's identified resources, priorities, and concerns.

The teacher uses state, local, regional, and national resources to aid in the delivery of services for students.

The teacher matches home, school, and community resources with students' needs.

The teacher demonstrates knowledge of the roles of paraprofessionals and volunteers in an instructional program.

The teacher demonstrates the ability to work with and supervise paraprofessionals and volunteers in an instructional program.

The teacher employs adult learning principles in supervising and training other adults.

The teacher facilitates the identification of staff development needs and strategies for professional growth.

The teacher communicates program needs, processes, and outcomes to administrators, other teachers, parents, and the community.