

## Description of CTS Courses and Activities Offered

1) **Nature Observation:** *An introductory class designed to acclimate students to the outdoor environment, initiate the concept of Creative Thinking Skills, and focus attention on the unique aspects of each of our five senses. Students are led through exercises that enhance sensory effectiveness in wilderness settings. Characteristics of specific habitats are observed (i.e.: chaparral, mixed-coniferous, etc.) and the terms "biotic", "a biotic", "predator" and "prey" are introduced.*

### 5<sup>th</sup> grade

-Investigation and Experimentation 6a

### 6<sup>th</sup> grade

-Ecology (Life Sciences) 5e

-Resources 6b

2) **Team Challenge:** *A series of team building group initiatives at ground level designed to provide students with the opportunity of experiencing the transition from working as an assembled group of individuals into a problem solving, cooperative, supportive, and coordinated "team". Correct "spotting" techniques and basic team initiative/ropes course safety rules are thoroughly reviewed and practiced.*

### 5th grade

-Movement Concepts 2.1

-Self Responsibility 5/1, 5.3, and 5.4

-Social Interaction 5.5 and 5.6

-Group Dynamics 5.7

### 6<sup>th</sup> grade

-Combinations of Movement Patterns and Skills 1.9 and 1.10

-Self Responsibility 5.1 and 5.2

-Social Interaction 5.3

-Group Dynamics 5.4 and 5.5

### 7<sup>th</sup> grade

-Combinations of Movement Patterns and Skills 1.4 and 1.6

-Movement Concepts 2.2 and 2.5

-Self Responsibility 5.1

-Social Interaction 5.3

-Group Dynamics 5.4 and 5.5

### 8<sup>th</sup> grade

-Movement Concepts 2.1 and 2.3

-Combinations of Movement Patterns and Skills 2.4

-Self Responsibility 5.1 and 5.2

-Social Interaction 5.4

-Group Dynamics 5.5, 5.6, and 5.7

**3) Riparian Studies Class:**                    *The unique properties of water are introduced and its importance to all of life. After a description of the chemical composition of water, students will conduct their own water surface tension test. Our Riparian Habitat is observed from several different vantage points as the various “cycles” of this ecosystem are observed and discussed. Students divide into smaller research groups to perform 4 different chemical tests on water samples from Lake Vera and our two feeder creeks (Brush Creek and Rock Creek) then, invertebrates and aquatic animals are collected and identified. The data from these exercises is recorded and then shared between research groups.*

5th grade

- Physical Sciences 1a, 1b, and 1h
- Earth Sciences 3a, 3b, 3c, 3d, 3e, 4a, and 4b
- Investigation and Experimentation 6c, 6e, 6f, 6g, and 6h

6<sup>th</sup> grade

- Shaping Earth’s Surfaces 2a and 2b
- Heat (Thermal Energy) (Physical Sciences) 3a
- Ecology (Life Sciences) 5a, 5b, 5c, 5d, and 5e
- Investigation and Experimentation 7a, 7b, 7d, 7e, and 7h

7<sup>th</sup> grade

- Structure and Function in Living Systems 5a, 5b, and 5f
- Investigation and Experimentation 7a, 7c, and 7e

**4) Bouldering Class:**                    *Beginning with an introduction to Rock Climbing knots and knot tying the students are then guided through a series of basic Rock Climbing techniques while safely on a “pull-break, pinch-slide” belay. Climbing on established routes to the top of our 20’ granite boulder the climbing techniques of “smudging”, “laying back”, and “mantling” are introduced and practiced, concluding with a short rappel back to the ground level. Strengthening of personal self confidence as well as learning to encourage, support, and help others are stressed in this activity.*

5<sup>th</sup> grade

- Movement Concepts 2.1
- Self Responsibility 5.1, 5.3, and 5.4
- Group Dynamics 5.7

6<sup>th</sup> grade

- Combinations of Movement Patterns and Skills 1.9 and 1.10
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

7<sup>th</sup> grade

- Combinations of Movement Patterns and Skills 1.4 and 1.6
- Movement Concepts 2.2 and 2.5

**Bouldering Class 7<sup>th</sup> grade CA curriculum standards continued:**

- Self Responsibility 5.1
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**8<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 2.4
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.4
- Group Dynamics 5.5, 5.6, and 5.7

**5) Ornithology Class:** *Students will explore the Riparian Habitat that borders Brush Creek and its rich variety and diversity of bird life. Bird shelter, feeding, nesting and species interaction is introduced and discussed. At the "Classroom-in-a-Box" students see the details of feather design using our mounted bird collection and learn about the nature of bird flight. Utilizing our private collection, students will investigate the differences and the complexity of various birds' nests. Concluding with a visit to our Bird Blind students will be able to observe and identify several different indigenous species in their natural environment.*

**5<sup>th</sup> grade**

- Investigation and Experimentation 6a and 6g

**6<sup>th</sup> grade**

- Ecology (Life Sciences) 5a, 5b, 5c, 5d, and 5e
- Resources 6b
- Investigation and Experimentation 7b

**7<sup>th</sup> grade**

- Cell Biology 1a and 1f
- Evolution 3b and 3e
- Structures and Function in Living Systems 5a, 5b, and 5g
- Physical Principles and Living Systems (Physical Sciences) 6h
- Investigation and Experimentation 7a

**6) Climbing Wall Activity:** *While safely on "team belay" students face the challenge of climbing this 24' vertical surface on man-made climbing holds. The concept of "climbing with your feet" is introduced, as our trained instructors guide and encourage the students through this personal self confidence and team building exercise.*

**5<sup>th</sup> grade**

- Movement Concepts 2.1
- Self Responsibility 5.1, 5.3, and 5.4
- Group Dynamics 5.7

**6<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 1.9 and 1.10

**Climbing Wall Activity 6<sup>th</sup> grade CA curriculum standards continued:**

**6<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 1.9 and 1.10
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**7<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 1.4 and 1.6
- Movement Concepts 2.2 and 2.5
- Self Responsibility 5.1
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**8<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 2.4
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.4
- Group Dynamics 5.5, 5.6, and 5.7

7) **Trees Class:** *Following our trail that borders Rock Creek, and beyond, the students are introduced to the trees which are found in the Chaparral, Riparian, and Mixed-Coniferous Ecological Zones of the Sierra Nevada Mountain Ranges and Foothills. The parts of a tree, including the function of each, are identified and discussed as are the interrelationships with other life forms of this habitat. Students will investigate large-diameter tree rounds and take professional "core samples" to determine rates of growth and related environmental conditions present in the past.*

**5<sup>th</sup> grade**

- Physical Sciences 1a
- Life Sciences 2a, 2e, 2f, and 2g
- Investigation and Experimentation 6a, 6f, and 6g

**6<sup>th</sup> grade**

- Ecology (Life Sciences) 5a, 5b, 5c, and 5e
- Resources 6b
- Investigation and Experimentation 7b

**7<sup>th</sup> grade**

- Cell Biology 1a and 1f
- Structure and Function in a Living System 5a and 5f
- Investigation and Experimentation 7a

8) **Entomology Class:** *Posters and models are used to illustrate insect identification. Several professional insect collections are on display and used for an introduction*

to insect, and insect order, identification and classification. Students are introduced to the terms "consumer" and "decomposer" within the web of life. Students are led on an insect hunt and participate in collection and mounting insects for their very own insect collection.

5<sup>th</sup> grade

- Life Sciences 2b
- Investigation and Experimentation 6a

6<sup>th</sup> grade

- Ecology (Life Sciences) 5b, 5c, 5d, and 5e

7<sup>th</sup> grade

- Structure and Function in Living Systems 5a and 5b
- Physical Principles of Living Systems 6h

9) **Vertical Playpen Activity:**            *While safely on "team belay" students face the challenge of climbing this 60' vertical surface using man-made climbing holds. The concept of "climbing with your feet" is introduced, as our trained instructors guide and encourage your students through this personal self confidence and team building exercise.*

5<sup>th</sup> grade

- Movement Concepts 2.1
- Self Responsibility 5.1, 5.3, and 5.4
- Group Dynamics 5.7

6<sup>th</sup> grade

- Combinations of Movement Patterns and Skills 1.9 and 1.10
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

7<sup>th</sup> grade

- Combinations of Movement Patterns and Skills 1.4 and 1.6
- Movement Concepts 2.2 and 2.5
- Self Responsibility 5.1
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

8<sup>th</sup> grade

- Combinations of Movement Patterns and Skills 2.4
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.4
- Group Dynamics 5.5, 5.6, and 5.7

10) **Archery Class:**                    *Students are introduced to the bow and arrow, its history and proper use. Emphasis is on safety as students, and accompanying adults, are given the opportunity to test their skills on the Archery Range.*

**Archery Class CA curriculum standards continued:**

**5<sup>th</sup> grade**

- Movement Concepts 2.1
- Body Composition 3.7

**6<sup>th</sup> grade**

- Movement Concepts 2.1, 2.2, 2.3, 2.4, and 2.5

**7<sup>th</sup> grade**

- Movement Concepts 2.2, 2.3, and 2.5

**8<sup>th</sup> grade**

- Movement concepts 2.1, 2.2, and 2.3
- Combinations of Movement Patterns and Skills 2.4

11) **Compass Orienteering Class:** *After an introduction to the proper use of the compass and location of basic coordinates, students proceed in teams of two to navigate their way around a course of multiple stations. Before, and after, the successful completion of this course, students are introduced to topographical maps of the area and given a series of tasks to complete which will familiarize them with these navigational tools and symbols.*

**6<sup>th</sup> grade**

- Investigation and Experimentation 7f

12) **Zip-Line Activity:** *While in a climbing harness and safely on belay students ascent 40' to the Zip-Line launch mounted to one of our Ponderosa Pine Trees. Our Zip-Line instructor assists each student in preparation for their launch beginning a 350 yard elevated "Zip" through the forest canopy: an experience that no one will ever forget!*

**5<sup>th</sup> grade**

- Movement Concepts 2.1
- Self Responsibility 5.1, 5.3, and 5.4
- Group Dynamics 5.7

**6<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 1.9 and 1.10
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**7<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 1.4 and 1.6
- Movement Concepts 2.2 and 2.5
- Self Responsibility 5.1
- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**Zip-Line Activity CA standards continued:**

**8<sup>th</sup> grade**

- Combinations of Movement Patterns and Skills 2.4
- Self Responsibility 5.1 and 5.2
- Social Interaction 5.4
- Group Dynamics 5.5, 5.6, and 5.7

13) **Wilderness Rescue Class:** *Students are introduced to basic First Aid and Rescue techniques that are unique to the wilderness environment. All students will have the experience of practicing such activities as sling making and how to build a stretcher using only their clothing and tree branches. Skills related to helping and services to others are stressed.*

**5<sup>th</sup> grade**

- Social Interaction 5.5 and 5.6
- Group Dynamics 5.7

**6<sup>th</sup> grade**

- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**7<sup>th</sup> grade**

- Social Interaction 5.3
- Group Dynamics 5.4 and 5.5

**8<sup>th</sup> grade**

- Social Interaction 5.4
- Group Dynamics 5.5, 5.6, and 5.7

14) **Stalking and Tracking Class:** *Exploring a variety of trails and along the perimeters of our Riparian Habitats, students are introduced to the basic skills and techniques of identifying, tracking, and stalking animals that are indigenous to the Sierra Nevada Mountain Ranges and Foothills. Diversity of animal life, various gaits, associated behaviors, and interaction are explained as animals prints are located, studied, and discussed. Plaster of Paris casts of various animal prints are made, in the field, for each class to keep.*

**5<sup>th</sup> grade**

- Investigation and Experimentation 6a, 6c, 6f, and 6h

**6<sup>th</sup> grade**

- Ecology (Life Sciences) 5a, 5b, 5c, 5d, and 5e
- Investigation and Experimentation 7e and 7h

**7<sup>th</sup> grade**

- Structure and Function in Living Systems 5g
- Physical Principles and Living Systems 6h
- Investigation and Experimentation 7c

15) **Herpetology Class:** *In the Herpetology Center students will see several species of snakes, lizards, and amphibians indigenous to the Sierra Nevada Mountain Ranges and Foothills. A wide variety of Herpetology facts will be explained and discussed using the actual species for illustration. Students will be allowed to handle the animals, to a limited degree, under strictly controlled conditions. The terms "predator" and "prey" within the web of life are defined and discussed.*

5<sup>th</sup> grade

-Life Sciences 2a

-Investigation and Experimentation 6a

6<sup>th</sup> grade

-Ecology (Life Sciences) 5b, 5c, 5d, and 5e

7<sup>th</sup> grade

-Structure and Function in Living Systems 5a and 5b

-Physical Principles and Living Systems 6h

16) **Nocturnal Excursion Class:** *Beginning after dark students are introduced to night vision and the structure of the human eye compared to various nocturnal animals indigenous to the Sierra Nevada Mountain Ranges and Foothills. The terms "nocturnal", "diurnal", and "crepuscular" are introduced and defined. Various nocturnal animals including their habits and some of the unique aspects of their design are discussed and the "Bat and Moth" game is used to illustrate the role of the senses in night hunting. Using a powerful laser light, constellations of the night sky are identified and the students are instructed in techniques used to locate the North Star in the night sky. The term "bioluminescence" is defined and the term "triboluminescence" is introduced and defined during an exciting nighttime experiment that creates light through friction.*

5<sup>th</sup> grade

-Physical Sciences 1a and 1b

6<sup>th</sup> grade

-Heat (Thermal Energy) (Physical Sciences) 3a and 3b

7<sup>th</sup> grade

-Physical Principles and Living Systems 6a, 6b, and 6c