

Educational Objectives

Educational objectives are presented at two levels of specificity. At the most general level, Level I, objectives are defined in broad behavioural terms. Next, Level II objectives are defined in terms of the knowledge and skills that must be enhanced and the values that must be modified to achieve the behavioural changes specified by Level I objectives. Level I and Level II objectives represent the desired outcomes for all target audiences.

Level III objectives define specific methods and techniques required to accomplish level II objectives. Objectives defined at this level take into account the intellectual and physical maturity of each target audience. Level III objectives are presented in this manual as "Instructional Tactics" and are located in Section 2, "Characteristics of Young Cyclists".

Cycling injuries are the end product of a sequential chain of events. Injuries may be avoided or prevented by modifying any of the events in this chain. To provide an organizational framework for presenting educational objectives, bicycle riding can be divided into three distinct sets of functions: (1) preparatory phase, functions accomplished before the cyclist departs on a trip; (2) anticipatory phase, functions required to select a safe course (path and speed) through an area; and (3) reactive phase, functions required to respond to a specific threat in the environment.

Level I Objectives

Level II Objectives

Preparatory-Phase Functions

Increase cyclists' ability and inclination to perform a safety check before departing on a trip.

- C Increase knowledge of parts of the bicycle and their functions.
- C Increase knowledge of procedures and criteria for evaluating the bicycle's state of repair.
- C Increase knowledge of procedures and criteria for evaluating the adequacy of safety components.
- C Increase knowledge of procedures and criteria for determining whether the bicycle fits the rider.
- C Increase knowledge of risk associated with riding a bicycle that has mechanical defects, is ill-fitting or is not equipped with needed accessories.

Increase cyclists' ability and inclination to repair the bicycle and perform necessary maintenance and adjustments.

- C Increase knowledge of maintenance, adjustment and repair procedures.
- C Increase knowledge of maintenance, adjustments and repairs that should be accomplished by a parent or professional bicycle mechanic.

Level I Objectives

Increase cyclists' ability and inclination to evaluate and select necessary safety equipment and accessories.

Increase cyclists' ability and inclination to evaluate the impact of weather and lighting conditions on bicycling safety.

Increase cyclists' ability and inclination to consider their own capabilities for completing a trip safely.

Level II Objectives

C Increase knowledge of procedures and criteria for evaluating the adequacy of safety equipment for a trip.

C Increase knowledge of the necessity for specific items of safety equipment, clothing and accessories.

C Increase knowledge of procedures and criteria for determining correct fitting and adjustment of equipment, clothing and accessories.

C Increase knowledge of the effect of inclement weather on likelihood of falls and collisions.

C Increase knowledge of the effect of darkness on likelihood of falls and collisions.

C Increase knowledge of the necessity for lighting equipment when night riding cannot be avoided.

C Increase knowledge of the effect of specific mental and physical impairments on likelihood of falls and collisions.

C Increase awareness of the effect of specific knowledge and skill deficiencies on likelihood of falls and collisions.

C Increase awareness of the knowledge and skills required to complete various types of trips with reasonable safety.

Anticipatory-Phase Functions

Level I Objectives

Increase cyclists' ability and inclination to select optimal course in the traffic environment:

- C Cyclist's position on the roadway (direction of travel and distance from curb).
- C Yielding to cross traffic.
- C Yielding to same direction traffic.
- C Positioning at controlled and uncontrolled intersections.
- C Positioning between intersections.

Increase cyclists' ability and inclination to select optimal course in the natural environment:

- C Riding uphill and downhill.
- C Riding during darkness.
- C Riding on slippery, wet or debris-covered roadway.
- C Riding in the heat or cold.

Level II Objectives

- C Increase ability to identify optimal course for high-hazard locations, manoeuvres and conditions.
- C Increase validity of cyclists' assessment of the relative degree of risk associated with optimal and sub-optimal courses.
- C Increase knowledge of needs that are in competition with the need for safety and decrease the perceived need satisfaction associated with sub-optimal courses.
- C Increase ability and inclination to search for, recognize and cope with hazards.
- C Increase validity of expectations that may influence course selection.
- C Increase knowledge of the time and space required to respond to a threat.

- C Increase ability to identify optimal course.
- C Increase validity of cyclists' assessment of the relative degree of risk associated with optimal and sub-optimal courses.
- C Increase ability and inclination to detect, recognize and avoid hazards.
- C Increase validity of expectations that may influence course selection.
- C Increase knowledge of time and space required to respond to a threat (as a function of bicycle handling skill and bicycle speed).

Reactive-Phase Functions

Level I Objectives

Increase cyclists' ability and inclination to search effectively for motor vehicles that pose a threat.

Increase cyclists' ability to evaluate situations and to recognize the need for evasive action.

Increase cyclists' ability to select and execute optimal evasive action.

Level II Objectives

- C Increase knowledge of limitations of the visual system.
- C Increase inclination and ability to search selectively and to recognize cues signalling the presence of a threat.
- C Increase validity of expectations that may influence cyclists' assessment of the need to search.
- C Increase knowledge of stimuli that may distract attention and increase ability to cope with distractions.
- C Increase ability to cope in situations where information-processing capacity is overloaded.
- C Increase validity of cyclists' assessment of the degree of risk associated with failures to search.
- C Increase validity of expectations that may influence cyclists' assessment of the need for evasive action.
- C Increase cyclists' ability to make critical spatial judgements.
- C Increase cyclists' ability to estimate stopping distance and maximum turning radius as a function of speed, roadway gradient, type of bicycle, type and condition of brakes, and roadway surface condition.
- C Increase cyclists' ability to execute emergency braking and turning.