



Transport
Canada

Transports
Canada



TP 15153E
(12/2011)

Active and Safe Routes to School

Cycling Resource Manual



This document was prepared for Transport Canada by Hub for Action on School Transportation Emissions (HASTE).

© Her Majesty the Queen in Right of Canada, represented by the Minister of Transport, 2011.

Cette publication est aussi disponible en français sous le titre Cyclisme pour les écoliers actifs et en sécurité – Manuel de ressources.

For a print copy or an accessible version of this publication, please visit <http://transact-en.tc.gc.ca> or contact Transport Canada's Publications Order Desk at 1-888-830-4911 — International at 613-991-4071.

An electronic version of this publication is available at <http://tc.gc.ca/ecomobility>.

TP 15153E

ISBN: 978-1-100-18791-4

Catalogue No.: T22-203/2011E-PDF

Permission to reproduce

Transport Canada grants permission to copy and/or reproduce the contents of this publication for personal and public non-commercial use. Users must reproduce the materials accurately, identify Transport Canada as the source and not present theirs as an official version, or as having been produced with the help or the endorsement of Transport Canada.

To request permission to reproduce materials from this publication for commercial purposes, contact:

Publishing and Depository Services
Public Works and Government Services Canada
Ottawa ON K1A 0S5

droitdauteur.copyright@tpsgc-pwgsc.gc.ca

About the Manual

This manual is intended as a resource for schools, school districts, and municipalities interested in supporting and encouraging cycling trips by school community members, including students, families, and school staff.

It is not a program model or template, nor is it a how-to guide. There are a number of excellent program models and guides in existence, supported by experienced organizations and individuals. The purpose of this manual is to provide an overview of the available options, along with an assessment of the resources and circumstances in which they are effective. The manual provides a comprehensive (though not exhaustive) range of available options, along with approaches and strategies to guide their implementation, to allow schools and municipalities to develop an initiative best suited for their context and needs.



The Role of Municipalities

School districts are responsible for the governance of public schools, but transportation largely falls outside of their purview because it depends on factors over which school districts have no authority. Most factors that impact how school community members choose to travel – such as roads and sidewalks, land-use planning, traffic calming, etc. – are the responsibility of municipalities. As such, municipalities must play a central role, either in partnership with school districts or as leaders themselves, in facilitating bicycle trips to and from school.



Content Overview

The **Program** section of the manual lists a number of strategies schools can employ to encourage student and family cycling. Ranging from regular programs to one-off events, these strategies include a Checklist of essential elements, a breakdown of their suitability for different school characteristics or circumstances, and some common variations or customizations.

The **Skill, Confidence, and Awareness** section lists strategies for overcoming specific knowledge gaps or shortcomings keeping students from cycling to school. These include safety awareness, familiarity or comfort with bicycles, bicycle-handling skills, road- or trail-riding skills, and route planning.

The **Strategies** section deals with the “how” of encouraging student and family cycling. Specific strategies include those for making school cycling initiatives more inclusive and attractive to students, and for helping adult volunteers effectively model and instruct positive cycling skills and behaviour.

The **Infrastructure and Facilities** section covers physical changes and investments that make schools more attractive and conducive to cycling, such as bicycle-storage and a range of end-of-trip facilities. A number of resources are provided to help schools and municipalities address neighbourhood-wide bikeability and traffic safety.

The **Policies** section lists ways that schools, school districts, and municipalities can change or introduce official policy to encourage and support cycling to school. This section considers a range of policy options from early dismissal for cyclists to help them beat the traffic rush to addressing school cycling and traffic safety issues in municipal bylaws and planning.

The **Resources** section lists a variety of materials, organizations, models, sources, and standards that schools and programmers will find helpful for developing and implementing a school cycling initiative. In an effort to make the resources as accessible as possible, resources that can be accessed or ordered online are listed explicitly, while general resources subject to regional variation are described in broader terms so that local occurrences can be identified as applicable.

Table of Contents

The Role of Municipalities.....	iii
Content Overview	iv

1 Programs to encourage students to ride to school

Bicycle Train (Bicycle Bus)	1
Kilometre Club or Contest	3
Bike-to-School Event	5
Bicycle User Group	7
Bike Check	8
School Bike Club.....	9
Bikers' Celebration	11
Bike-a-thon.....	13
Bicycle-Themed Performance or Presentation.....	13

2 Providing the skills, confidence, and awareness to allow students to ride safely

Bike Rodeo.....	15
Bike Fit and Function	18
Bike safety.....	22
Helmets	23
Road Rules	24
Riding Drills and Games	25



Route Planning	28
Riding for Real.....	30

3 Strategies for encouraging students to cycle

Guidelines for Adults Riding with Children and Youth.....	33
Fun > Safety	35
Modelling.....	37
Planning For The Weather.....	39

4 Cycling Infrastructure and Facilities

Bicycle Parking/Storage.....	41
End-of-Trip Facilities.....	42
Resources.....	43

5 Policies

School/School Board	45
Municipality	47

6 Resources to help support and encourage riding to school

Materials.....	49
Program Models.....	51
Community Resources.....	53

1 Programs to encourage students to ride to school

These are strategies for encouraging riding to and from school that can be implemented by school staff, students, parents, or community volunteers. For each strategy, there is a description, a list of necessary and suggested resources and facilities, and a suitability index (age range, neighbourhood type, etc.)



Bicycle Train (Bicycle Bus)

A bicycle train is the cycling version of a walking school bus. A group of students, accompanied by one or more parents or volunteers, ride together along a prescribed route, picking up riders en route to school.

The keys to a bicycle train's success are flexibility, responsibility, and open communication between families. Bicycle train families arrange to share in the daily responsibility of transporting children to and from school. Bike trains provide opportunities to establish friendships with other families in the neighbourhood and can help to reduce the volume of traffic in the neighbourhood and at the school.

Bicycle Train Checklist

- Informed consent of all parents.
- Established schedule and route to school.
- Participants with sufficient cycling skills, confidence, and experience for the route they will be riding.
- Emergency contact list.
- Road-worthy bicycles and safety equipment for all participants.



Suitability Factors:

- As they allow students to travel more quickly and/or over longer distances to school, bicycle trains are well suited as an active travel strategy for destination schools or schools with large catchment areas, such as middle schools.
- Bicycle trains are ideal in neighbourhoods with off-road or dedicated bike or multi-use paths.
- Participants' riding ability should be suitable to the route they will be riding. For road riding, students should know the rules of the road and have experience riding in a group.

Variation: The Meet and Ride

In cases where a safe cycling route all the way to school isn't available, distances are too great, or picking up students along the way isn't possible, a bicycle train can start from a pre-determined meeting point. The meeting point should have enough room for participants and their families to gather and prepare for the ride, as well as a safe place to enter the roadway. Participants still get the benefits of a fun and active trip to and from school, and vehicle traffic in the school zone is reduced.

Variation: Short-term Bicycle Train

Riding to school in a bike train requires ongoing organization and may not be for everyone, but it is undoubtedly a great learning experience. If long-term commitment is an issue, consider organizing a bicycle train every day for the first two weeks of schools: this takes advantages of late-summer light and good weather, gives families a chance to try the idea, and gives children who might be ready to ride independently or with a buddy an opportunity to learn their route, get some practice, and see safe cycling modelled by a bicycle train leader.



Variation: Bike Buddy Program

A Bike Buddy program reduces the formality and logistical challenges of a bicycle train, while maintaining its social aspects and keeping kids from riding alone. Pairing up friends, neighbours, or confident and new cyclists are all options within a Bike Buddy program, which simply provides a mechanism (compiling and sending home a list of interested students, holding a meeting where interested students or families can connect, etc.) for connecting individual students or families who want to ride to school.

Kilometre Club or Contest

The benefits of cycling to school can seem intangible to students and motivation can lag as the weather turns sour. An organized effort or contest can generate excitement and reinforce interest by providing a goal that is more immediate and easier to appreciate.

A Kilometre Club or Contest challenges students to track their cycling trips or distances and put these towards a predetermined goal. The challenge and rewards should be appropriate to the school's values, resources, and goals. Some options to consider include:

- What will be tracked: Number of trips or kilometres cycled? Trips to school or all trips taken by bicycle?
- Individual or group challenge: Are students trying to reach individual goals or milestones, or contribute to a group or class total?
- Incentives: These should reinforce the values of active travel and can range from individual prizes – such as bicycle accessories or a gift certificate to a local bike shop – to a reward for the winning class – such as an extra gym class.
- Distance or destination: Distance travelled can be turned into a more meaningful figure. A class could work on reducing or offsetting GHG (greenhouse gas) emissions, or set a goal of cycling across Canada or to a place they are studying.
- Have students use an online trip calculator or mapping tool to figure out their routes and distances and track their trips.

CONTEST CHECKLIST

- A coordinator who collects trip or distance totals.
- A record-keeping system.
- Predetermined goal or milestones.
- Rewards or incentives throughout the challenge.

Suitability Factors

- Because of the distances a bicycle can cover, cycling is particularly well suited to a distance challenge when a destination is involved. Having a destination encourages and empowers the group to go further and be more ambitious in picking a final destination.
- A cycling contest or challenge is a particularly useful strategy for maintaining interest by providing near-term goals and incentives.
- A challenge of this sort works well between schools or throughout an entire district, with schools competing for a trophy or larger prize.
- If a school's catchment is unsuitable for student cycling, or it includes students who aren't skilled and confident enough or able to make the ride to school, challenging students to record their bicycle trips and distances at home lets everyone participate while giving students the experience and practice they'll need to cycle safely to school.
- If a school's campus is suitable and safe for cycling, more supervised biking can happen at school.

Variation: Design Your Own Contest

A number of ideas and examples can be found on the U.S. Safe Routes to School website. http://www.saferoutesinfo.org/guide/encouragement/mileage_clubs_and_contests.cfm

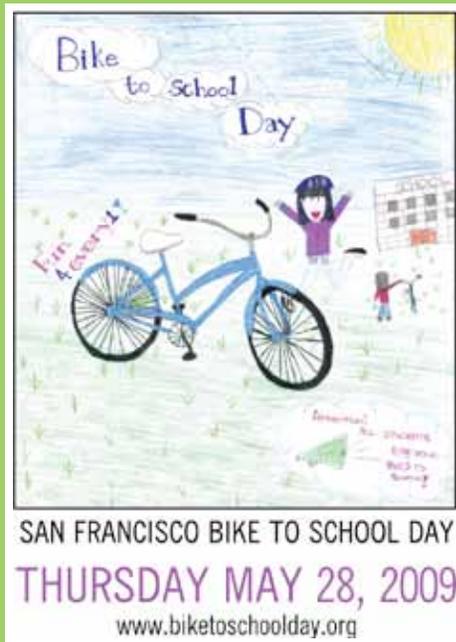
Variation: Online Tracking

There are a number of online programs that allows students to calculate and track their bike trips to school, and calculate things like calories burned and GHG emissions reduced. In BC, students can use HASTE's MyTravel Calculator: <http://www.hastebc.org/mytravel>. In Ontario, the ICanWalk online pledge works for bicycle trips, too, and qualifies students for great prizes: <http://icanwalk.ca/en/what-can-i-do/pledge>. And students all over Canada can use the Clean Air Achievers' Trip Tracker to log their trips: <http://www.cleanairachievers.ca>.

Bike-to-School Event

A bike-to-school event is a great way to generate interest and enthusiasm for cycling. While a whole-school cycling event can require work to set up and coordinate, it also creates a number of opportunities to:

- Provide cycling education to students. From going over the rules of the road to teaching on-bike cycling skills, every little bit helps get students ready and excited to ride to school.
- Raise awareness of traffic safety issues. Examining school traffic patterns and behaviour to ensure a safe event provides insights into how conditions might be improved to ensure everyday bike safety. Arriving at school with little or no car traffic can be an eye-opening experience for students and parents alike.
- Figure out how bike friendly a school is. Working out logistical issues around bicycle parking and access for the big event presents a good opportunity to determine how ready a school is to accommodate more student and staff cyclists.
- Discover and connect to community cycling resources. A bike-to-school event is a great opportunity to find out what groups and resources there are in the community to help promote and support regular cycling to school.
- Establish best cycling routes. Mapping out routes that families can use to ride to school not only raises awareness of those routes, but also highlights concerns that should be addressed to make them more bike friendly.
- Open their eyes. Making the trip by bicycle for the first time gives families the opportunity to discover the fun and benefits of doing so for themselves.



BIKE-TO-SCHOOL EVENT CHECKLIST

- Provide notice early and often so that parents can get students' bicycles tuned and ready.
- Create an event safety plan.
- Establish, announce, and monitor safe cycling routes to school.
- Plan a group meet-and-ride for students who can't cycle from home.
- Plan a celebration – create a festive atmosphere and invite performers or special guests.
- Consider having student and/or parent registration forms.

Suitability Factors

- A bike-to-school event relies on the school catchment area being – or being made – relatively bike friendly. If serious barriers to student cycling exist, or are thought to exist, a variation like the Bike Parade, or some preliminary steps towards assessing or improving bikeability, might be more appropriate.
- A bike-to-school event is a great opportunity to generate interest in or kick-start a regular school cycling program or event.
- Many communities or municipalities have established Bike-to-Work Weeks that are a great tie-in for a bike-to-school event. In cases where a community doesn't have a Bike-to-Work Week, a school event can be a great catalyst to get one started.
- A bike-to-school event represents a drastic change in school traffic for any school. A successful event should be preceded by bicycle skills and safety training for students, outreach and awareness campaign for parents, and careful preparation. Community resources like volunteers and traffic enforcement should be invited to play a role in the event.

Variation: Bike Parade

If parental concerns or physical barriers make riding to school impossible for some or all students, organizing a Bike Parade allows everyone to participate in the fun of a bike-to-school event. Designate a drop-off and meeting spot for children and families interested in participating and organize a mass ride to school. Have on-site helmet checks, snacks, and bike-decorating supplies ready to get parade participants ready for the ride.

Bicycle User Group

A Bicycle User Group, or BUG, is a group set up to promote cycling issues at a school. Ideally, members are drawn from different parts of a school community, with a common goal of promoting cycling and addressing and overcoming related barriers. A BUG is a great way to mobilize and organize cycling advocates, share the workload often taken on by cycling champions, and establish a forum for community members to bring and discuss their ideas and suggestions for improvements.

Bicycle User Groups are usually grassroots initiatives, but a school administration that wants to encourage cycling can create one and invite community members to join. Existing groups or networks within a school are often a good place to solicit interest in a BUG. A BUG can be as formal or informal as its members desire – it is an expression of a school community's interest in working on cycling issues, and should reflect and facilitate that.

Suitability Factors

- Where there is latent but unfocused interest in a school community to encourage and support cycling, creating a BUG can be an effective way of organizing this energy and moving forward.
- A formal process for setting up a Bicycle User Group within a larger bicycle advocacy framework can be found here: <http://www.bv.com.au/change-the-world/10629/>





Variation: Bicycle Advisory Committee

Many municipalities, and some school districts, have Bicycle Advisory Committees: formal committees or subcommittees charged with advising staff and decision makers on cycling-related matters. Creating an ad-hoc or formal bicycle advisory committee could be a long term goal after multiple schools within a district have established BUGs, or it could allow individual champions from a number of schools to get together, share challenges and ideas, and work on district-wide issues.

Bike Check

Occupying a unique place between vehicle and toy, bicycles are often in need of mechanical attention but often not taken seriously enough to receive it. A bike check by a qualified bike mechanic can provide anything from the basic care a bicycle needs to get rolling again to a diagnosis of what bigger problems – relating to repairs, fit, etc. – need to be addressed to get a cyclist back on the road.

A local bike shop invited by a school to combine a bike check session with another event or celebration can maximize the number of bikes brought to school and ensure maximum exposure for the participating shop.

Suitability Factors

- Older students (grades 5 and up) will appreciate the attention their bicycles receive. But parents are often the real targets of bike checks as they're most likely to be the ones who make the decision to invest in a repair or upgrade.
- Bike-shop business is often very seasonal: it is best to approach them during the winter about helping with school or youth programs, which, not coincidentally, is a great time to host indoor activities that will not be influenced by the weather.

Variation: ABC Bike Check

A simple activity that helps students check and learn about the essential parts of their bike. For a description of this activity, see Implementation Ideas in the Bike Fit and Function section in part 3 of this Manual.

Variation: At the shop

Bike shops might be able to host a bike check or maintenance workshop at the store after hours for interested students or families. Such an arrangement means shop staff doesn't have to lug tools and stands around with them, makes dealing with repairs less challenging, and gets cycling families and students familiar and comfortable with a vital community resource: the local bike shop.

School Bike Club

A bike club is a free or low-cost after-school cycling program. Students participate in cycling activities, practice riding skills, and learn basic bike care and maintenance, while having an opportunity to build their confidence as cyclists in a fun environment with other students.

Bike clubs are normally for students in grade 4 and above who have the necessary riding and decision-making skills to negotiate their bikes on roads or paths. Bike club leaders should be knowledgeable and enthusiastic role models who are willing to inspire and educate students to bike confidently. Bike clubs can provide students with cycling skills, positive reinforcement, self esteem, and a positive way to meet and make friends while participating in healthy physical activity.

Keys to starting and planning a school bike club:

- Gain support from school staff and parents.
- Make initial connections with local supportive resources.
- Promote the idea with students to gauge interest and incorporate their ideas.
- Market and advertise the club as a fun and inclusive activity.
- Work with student participants to establish club activities, goals, and guidelines.
- Hold events and celebrate successes.

BIKE CLUB CHECKLIST

- Informed consent and photo release forms for participants and their families.
- Means of providing club participants with access to bicycles and safety equipment.
- Space (inside and/or outside) for club meetings, activities, and storage.
- List of rainy-day events.

Suitability Factors

- Like any student club, a bike club succeeds based on the enthusiasm and interest of its members. Students should be involved in designing activities and picking routes and destinations, to engage them in the club and give them the skills they need to cycle independently.
- A bike club relies on participating students having access to bicycles – either their own or those provided by the school/club. For schools in lower-income communities, an Earn-A-Bike Program or Community Bike Drive might be a good way to provide bike club members or the school with bicycles needed for club activities.
- Consistency is important to any after-school club. For a bike club, this might mean having dedicated club leaders providing on-going activities and events. It also might require a variety of bike-related activities to ensure the club remains active during the winter and when the weather is not conducive to riding. This is a great time to focus on soft skills like route planning; fun, group-building activities like movies; and bicycle maintenance and mechanics.

Variation: Community Bike Club

Setting up a bike club in partnership with a community group might be a viable option for a school without the expertise or resources to establish and run one by itself. Bike or athletic clubs, community and youth centres – any community group that works with young people and focuses on physical activity or the outdoors might be a good partner.

Bikers' Celebration

A Bikers' Celebration is a drop-in gathering aimed at celebrating and promoting the fun of biking and connecting experienced cyclists with each other as well as interested novices. The celebration builds community and provides positive social reinforcement by bringing cyclists together. It also brings resources, activities, and food to engage students, parents, and school staff on the joys of biking.

Possible activities include:

- Eating a nutritious and tasty meal or snack – good fuel for hungry cyclists.
- Mapping bike routes to school, including points of interest or concern and opportunities for improvement along the way.
- Bike checks, either with a bike mechanic or using the ABC Bike Check model (see section 2, Bike Fit and Function).
- Prizes and swag for participating cyclists to provide encouragement and generate excitement.
- Providing bike safety information and resources.
- Setting up a Bike Train, Bike Buddy system or a Meet-and-Ride.

BIKERS' CELEBRATION CHECKLIST

- Organize food/snacks, resources, and activities.
- Promote the celebration through newsletters, student generated posters, announcements, etc.
- Invite community groups to participate/contribute/sponsor the event.

Suitability Factors

A Bikers' Celebration is a good starting point for a school to gauge student, parent, and staff interest in biking to school. It can be an inclusive event for all grades as well as a way to connect cycling students and families. Biker celebrations help to highlight a school's cycling population's interests and concerns, and, as such, are an excellent way to begin working to make a school more bike friendly.

Variation: Biker Breakfast

A "Biker Breakfast" gets a school's cyclists together before school to enjoy breakfast together, and has the added benefit of bringing cyclists in before peak traffic on roads or around the school.

Bike-a-thon

A Bike-a-thon is an organized ride in support of a cause or organization, usually through raising funds. 'Thons are popular activities with schools, combining community engagement, education/awareness about important issues, and physical activity into a single fun event.

As with any large-scale school event, organizing a Bike-a-thon requires a great deal of preparation and community/volunteer support. A comprehensive preparatory Checklist can be found on the iBike website – <http://www.ibike.org/encouragement/bike-a-thon.htm> – and an overview Checklist of major elements is included below.

BIKE-A-THON CHECKLIST:

- Overall event planning.
- Fundraising, sponsorship, and community partnerships.
- Participant organization.
- Volunteer recruitment/training.
- Course planning.

Suitability Factors

- Organizing a Bike-a-thon does not directly relate to encouraging transportation cycling. Indeed, it has been argued that events like Bike-a-thons can actually serve to marginalize or even stigmatize cycling by associating it with “suffering” for a good cause. But a fun, high-profile, mass-participation event like a Bike-a-thon can be an effective first step towards raising the profile of and interest in bicycles in a school community for the simple reason that it gets a lot of kids riding.

Bicycle-Themed Performance or Presentation

Bringing in local cycling champions and heroes is an excellent way to generate enthusiasm for biking at a school. Many Olympian, professional, amateur, and expedition cyclists are eager, experienced, and well prepared to motivate students at schools to bike for fun, adventure, and health as part of an engaging assembly or school cycling event.

Resources: The following often have networks or contacts locally throughout Canada that may be willing and able to provide in-school cycling-related presentations and performances.

Clean Air Champions is an organization that works with high-level athletes on school environmental and health programs in communities across Canada:

<http://www.cleanairchampions.ca>

- Local bike shops and companies often participate in or sponsor cycling events, groups, programs, or expeditions.
- Local bike clubs are full of bicycle enthusiasts, and may have connections to professional or amateur competitive cyclists.
- Bicycle Advocacy Organizations work on community cycling issues and projects.
- Mountain Equipment Co-op stores are sources of grassroots support and networks of proactive members and groups: <http://www.mec.ca>
- The Otesha project organizes youth cycling and performance tours across Canada. If there isn't a tour coming through a school's community, there's likely an 'O'lumni nearby willing to share their experiences: <http://www.otesha.ca>

Suitability Factors

A fun bicycle-themed performance is a great way to generate interest in and awareness of a school's cycling initiatives or plans. It's also a nice reward for a school or class wrapping up a successful cycling event or challenge.

2 Providing the skills, confidence, and awareness to allow students to ride safely

Student cycling skills, experience, and confidence can vary widely. There are a number of cycling skills and safety program templates currently in use in Canadian schools. The intent of this section is not to duplicate existing program guides, but to fill in the gaps relevant to cycling to and from school and to suggest approaches that will help to encourage student cycling, rather than discourage students from a potentially regimented and unsafe activity.

Bike Rodeo

For schools lacking the time or resources to provide comprehensive bicycle skills and safety training, a simple bike rodeo will at least provide an opportunity to introduce basic road cycling skills and gauge students' cycling ability. Knowing what level of cycling interest, skill, and comfort students have is important in determining which encouragement strategy to employ.



There are many versions of the bike rodeo in existence and they're all quite similar. A typical challenge involves separate drills that touch on different skill areas and then combines them, simulating a common on-street scenario.

Community-based education programs that allow for repetition of bicycle safety messages, several opportunities for practice, and parental involvement... represent a more effective approach to improving bicycle safety in children

(Macarthur *et al.*, 1998).

For the activities listed below, set up a course (using ropes, cones, sidewalk chalk, or what have you) on a flat surface about 10 metres long by 50 centimetres wide. Students should proceed through the course one at a time at regular intervals, practicing the following skills:

1. Riding in a straight line: this drill draws on a student's bicycle handling and alertness. Being able to consistently ride in a straight line is the bare minimum ability a cyclist needs for riding even short distances in public, i.e. on a bike or mixed-use path.
2. Shoulder checking: this drill gets cyclists to notice what's going on behind them while maintaining momentum and a straight course. The shoulder check is an important information gathering technique for a cyclist riding with a group or in traffic.
3. Hand signal: this drill gives cyclists an opportunity to learn and practice their hand signals, and should be combined with the actual execution of the signalled manoeuvre (e.g. indicate a left hand turn and then turn left).
4. Combination shoulder check and hand signal: this drill combines all three individual actions into a sequence that a proficient cyclist will perform countless times on each ride: riding in a straight line, shoulder checking to gauge traffic, and making the appropriate hand signal before executing the signalled manoeuvre, all while maintaining control.

As noted above, a bike rodeo has two primary functions:

- First, it gives students a chance to learn and practice important on-street / path cycling skills in a controlled environment.
- Second, the bicycle rodeo provides an excellent opportunity to assess students' cycling attitudes, skills, and comfort level, answering questions such as: Are they taking the activity seriously and do they understand the point of the drills? Are they able to execute each drill or progress in their efforts? Do they approach the challenge with confidence and determination or are they nervous and repeating the same errors? Are students' bikes roadworthy or in need of repair? Knowing the skills, attitudes, and confidence level of individual cyclists and the group will provide important insight into what type of cycling initiatives to consider.

IMPLEMENTATION IDEAS

- Running a bike rodeo with a group of students means working with participants with a range of comfort levels and skills. Proactively creating a positive environment and collective challenge will ensure that no one gets bored or feels uncomfortable. Support students who are having trouble by noting their progression and providing multiple opportunities at each stage. Have more skilled and confident students model proper techniques, and set a goal that the students have to meet as a group to foster peer encouragement.
- Though they are being performed in a controlled, off-street environment, the skills being taught and practiced in a bike rodeo have direct on-street applications. The extent to which these skills and experiences resonate depends largely on the context provided. Asking students what the point of each drill is, where each skill might come in handy, etc., will provide resonance to a seemingly routine activity and get them thinking about the skills necessary to ride on a street or path.
- Bike rodeos work well with a few volunteers to monitor, spot unstable students, and provide encouragement. They're a great opportunity to get parents or other community volunteers involved in a school's cycling initiative.

Bike Fit and Function

Bike Fit

Having the right size bike is important for comfort, fun, and safety. A bike that is too small will be cramped and difficult to pedal. A bike that is too big is potentially unsafe, especially if the cyclist can't stand over the top tube. Though an understandable and common practice, it is counterproductive and unsafe to buy a child a bike that they need to "grow into" rather than one that fits them.

How to tell if a bike is a good fit:

- It should be comfortable to ride – this is the number one criterion!
- When standing over the top tube (see diagram below), the cyclist should be able to lift the front wheel at least 2 inches off the ground.
- Sitting on the bike seat with a foot on one of the pedals rotated until it is the point closest to the ground, the cyclist's leg should be only slightly bent.
 - » **Tip 1:** The seat post can be raised or lowered to achieve proper seat height. Most seat posts have a quick release clamp which makes this adjustment easy. A bike with a nut-and-bolt style clamp will require a wrench.
 - » **Tip 2:** New cyclists may want to adjust the height of their seat to be able to put a foot or toe down while sitting on the seat.
- Bike seats and handlebars are important for comfort and control on the bike. A bike shop can help with adjustments and replacements to ensure comfort and a good fit.

IMPLEMENTATION IDEAS:

- Bicycle fit is something that is best assessed and demonstrated in a hands-on fashion. However, as soon as children get on their bicycles, they're raring to go. An instructor should demonstrate proper bike fit themselves, or using a patient volunteer, before helping students make their own adjustments. Alternatively, the instructor could discuss proper bike fit with parents, as they may be more likely to give the matter serious attention.
- A staff person from a bike shop will be able to demonstrate proper bike fit. They can also bring along replacement saddles, grips, etc., to illustrate available options – this tends to get children and young people really inspired to consider the idea of proper and appropriate fit.

Basic bicycle parts and systems

Almost every child is familiar with the concept and form of a bicycle, but how they function is often a mystery, even to adults. Providing basic information about bicycle parts and systems can engage students and make bicycles more interesting and accessible. Familiarity with the parts of their bike also allows them do a basic inspection to keep their bike safe and in good working order, and help them identify a specific problem rather than dismissing the bike as “broken”.

The key components that contribute to a smooth, safe, comfortable, and enjoyable ride are:

- Handlebars for steering
- Tires for gripping
- Brakes for stopping
- Wheels, pedals, and drive train (chain) for rolling.
- Gears for shifting

Bicycles are simple machines, but they can take some time and effort to understand. A bicycle mechanic or enthusiast is probably the best person to go over parts or systems with students, but there are also a number of courses, books, and websites that will help anyone get a firm grasp of the basics; see the Resource section for a comprehensive list.

IMPLEMENTATION IDEAS

- ABC Bike Check: Learn the ABCs of Bike Maintenance to keep a bike safe and running well.

A for Air:

Check tires for wear on the tread and sidewall and for low air pressure. Tires with low pressure are easier to puncture, roll more slowly, and require more effort to turn. The recommended pressure is usually found on the side of the tire, noted in PSI (pounds per square inch). Rotate the wheel to see that it spins straight and does not rub the brakes. Keep wheel rims clean, as they are an important part of the braking system.



B for Brakes

Brake levers should be easy to reach from the handlebar, and should be easy to compress and release. Inspect brake pads regularly – they become worn down from braking and dirt from the road, and should be replaced as necessary. Also, as brake pads wear down, the levers have to be squeezed more for the pads to make contact with the rim. This can reduce braking performance. Barrel adjusters can help compensate for this.



C for Chain

The chain should be kept clean and lubricated to help with efficient pedaling and gear changes. Wipe off dirt **prior** to and excess oil **after** lubricating the chain. A little rust on the chain usually means it needs lubrication and will come off with a bit of use. A very rusty chain should be replaced by a bicycle mechanic.



S for Seat and Steering

A bicycle seat can be raised, lowered, moved forward and back, and angled differently. Having the seat at the proper height and angle makes for a comfortable ride. Handlebars should be easy to reach and shouldn't be loose or move independently of the front wheel. If they do, use the appropriate tools to secure them or get a bicycle mechanic to do so.



Draw a bike

At the outset of any planned bicycle promotion or education programming, have students draw a bicycle, label as many parts as they can, and sign their names. After the bike initiative has taken place, repeat the process and hand out the original drawings. Students and instructors will be amazed at how much their knowledge has grown, and how much their pictures – both mental and on paper – of bicycles have changed. Other versions of the bicycle diagram shown above (in many different languages and blank) can be found here: http://commons.wikimedia.org/wiki/File:Bicycle_diagram-en.svg

Suitability Factors

- Learning about parts, systems, and functions often presents students with a brand new way of looking at a bike. Tailor the exploration of the bicycle to make sure it is engaging, accurate, and age appropriate. There are materials in the Resource section of this manual that can help.
- Learning about bicycle function, mechanics, and maintenance is a great way to keep up student interest in cycling during the winter months, when riding is less attractive or impossible. This is also the best time of year to engage the assistance of bike shops and their staff.

Bike safety

As students learn the fun and freedom of biking, they must also learn the skills, attitudes, and knowledge to bike safely and share the road. Being safe on a bicycle means both avoiding and being properly prepared and equipped for accidents and falls.

Helmets

WHY WEAR A HELMET?

- Wearing a bike helmet has been shown to reduce the risk of head and brain injury by up to 85%. A bike helmet spreads the force of any impact out over the whole helmet. Also, some provinces (British Columbia, Alberta, Ontario, Nova Scotia, Prince Edward Island) have mandatory helmet laws for all cyclists or cyclists under the age of 18.

HOW TO CHOOSE A HELMET?

- First, look for the safety approval sticker on the inside of the helmet.
- Second, try it on for fit and comfort. The helmet should sit squarely and snugly with soft padding for comfort.

HOW TO FIT A HELMET

- The helmet should cover the top of the head and upper forehead.
- Fasten the buckle and adjust the strap junctions to just below the ears. Once it has been properly adjusted, the helmet should be snug and not easily moved or pushed around on the head.

WHEN TO REPLACE A HELMET

- Replace a helmet if it was involved in a crash or fall. Even a moderate impact is enough to compromise a helmet's protective capabilities. General wear and tear will contribute to degrading a helmet's foam over time, so it should be replaced every few years – most manufacturers have their own specifications.

Resources: <http://www.youtube.com/watch?v=6d0--DnnDag&feature=related>

IMPLEMENTATION IDEAS

- For a fun activity to demonstrate the value of wearing a helmet check out:
 - » The Melon Drop
http://www.thinkfirst.ca/downloads/resources/Melon_Drop_Instructions_Final.pdf
 - » The Egg Drop
<http://sonomasaferroutes.org/the-5-es-of-srts/education/Pages%2079-80%20-%20Helmet%20Safety.pdf>

Road Rules

Instructing young cyclists on the “rules of the road” is the crux of teaching bicycle skills, often both its main focus and its most challenging part. Knowing and following the rules for riding on the road is vital for being able to ride a bicycle safely for transportation. Taking an authoritative and no-nonsense approach to listing and emphasizing these rules can have the opposite effect of what is desired: it either fails to make an impression, or ends up rankling students and putting them off.

IMPLEMENTATION IDEAS

- The trick to communicating the “rules of the road” to young cyclists in a manner that will have a real and lasting impact is realizing that they already know and understand most of them. Instead of presenting the rules as a list of “thou-shalt-nots”, consider collaboratively creating and discussing a list of important road safety rules with students. Facilitate the discussion, and lead it in appropriate directions – “what about when it’s getting dark?” or “what would you do if X?” – but let students articulate the rules and why they’re important. This process will definitely take longer than simply dictating a list of rules, but will make up for itself in time saved reviewing and policing down the line. It also generates ownership over and investment in the “rules of the road.” Here’s a basic list to get started and help guide discussion:

1. Ride single file and as far right to the right-hand side of the road as practicable.
2. Wear a helmet when riding.
3. Be aware when riding: eyes and ears open.
4. Interact with other road users:
 - a) Make eye contact with drivers and pedestrians,
 - b) Alert pedestrians and cyclists when passing,
 - c) Use hand signals when turning, slowing down, or stopping.
5. Follow all posted traffic signs and obey all traffic laws.
6. Wear light-coloured clothing and use lights and reflectors in low light and at night.

Riding Drills and Games

The best way to learn bicycle handling and safety skills is to practice them on the road. However, drills and games can provide an excellent learning opportunity for young cyclists in a safe, traffic-free environment while at the same time keeping biking fun.

The Zig Zag (also known as the weave, slalom, or cornering)

Using traffic cones, have students weave in between the cones without hitting them. Start with wide turns so cyclists can get the feeling of steering by leaning the bike as they make their way around the cones. Cones can be brought closer together as cornering skills improve. This skill-building exercise helps develop control, balance, and coordination.

The Slow Race (Slug Race, Turtle Crawl)

This event requires a straight-line course where the last rider to cross the finish line without putting a foot down is the winner. A group of cyclists can ride all at once if there is sufficient room. The course should be between 30 and 50 feet long. Cyclists learn ultimate bike control, balance, and bike-handling skills.



The Bottle Pick Up

Have students try to pick up a water bottle within easy reaching distance (on a chair) as they ride by and then hand it off to be replaced for the next student. The bottle can be placed at a lower level as balance and skills improve. This is a fun and challenging way to improve one-handed riding and balance while leaning.



The Paper Boy

This activity recreates delivering the newspaper. Using a clothesbasket, garbage can or cardboard box, a number of rolled newspapers, and a shoulder bag, lay the targets out in a course and have cyclists ride the course throwing the newspapers into the targets. This activity improves balance, coordination, steering with one hand – and is a lot of fun.

The Rock Dodge

In this activity, cyclists approach an obstacle (use something soft like a tennis ball) and quickly weave their front wheels to avoid hitting it. Students learn the importance of using the front tire to manoeuvre around obstructions, allowing the back tires to follow or roll over the obstacle, and avoiding hazards while staying on course. On the road, a cyclist needs to be able to avoid hitting rocks, litter, road debris, and potholes while riding in a straight line.

The Emergency Stop (Stopping on a Dime)

In an emergency, a cyclist needs to stop as quickly as possible without losing control or falling. Have students begin at the start line and ride toward the finish, aiming to stop pedalling and apply their brakes so that their front wheel ends up squarely on the main finish line. To maintain control while braking hard, students should extend and brace their arms and shift their weight back as far as possible. Keeping pedals at the three- and nine-



o'clock position, the bikers will be able to be elevated enough to shift their weight back and maintain balance to pedal out of a potentially risky situation. It is a good idea to have a spotter for the first few times cyclists try this activity.

Foot Down Derby

Students ride in a defined space, trying to maintain balance – the last student still riding after everyone else has put their foot down or left the area is the winner. Students should not intentionally contact one another's bikes, and, if necessary, the space can be decreased as participants drop out (rope or cones make for good mobile boundaries) to increase the challenge. This activity focuses on bike control, confidence, and fun.

IMPLEMENTATION IDEAS

- Use sidewalk chalk, traffic cones, or rope to create courses and boundaries. Don't hesitate to try variations or make narrow courses to challenge students. Setting up courses can be a good opportunity to get volunteers or students themselves involved in defining the activities.
- Get parents and community members involved to help monitor, spot, and encourage students during activities. Bicycle-skill drills and activities are an especially good time to get parents involved so they can learn proper on-bike modelling techniques and watch students improving their skills and having fun.

- When kids get on their bikes, fun and energy are a natural outcome. Practice and demonstrate the activities beforehand. Channel students' enthusiasm into structured activities through clear instructions, keep the emphasis on fun, and watch students blossom into skilled and confident cyclists.

Route Planning

Route planning – deciding or defining how cyclists will get to and from their destination – is an important component of encouraging cycling to school. While designated or dedicated bicycle routes are becoming more common, most streets are designed primarily to accommodate cars and may not be suitable for young cyclists.



At schools without designated safe or best routes that students can use, students or families can use observation, experience, and the following criteria to determine their own best cycling routes to school (use existing maps of the school catchment or print out a Google map of an appropriate scale as a base map on which to work out the route):

- Route planning should prioritize bike or mixed-use paths, greenways and bike routes, and traffic-controlled or low-volume streets.
- The route should provide safe places to cross streets and minimize the number of street crossings overall.
- Note the location of safe places to go for help or support along the route.
- Identify safe places to enter the school zone where there are traffic controls and vehicle volume and speed is low.
- Note any points of regular or conditional concern (e.g. slippery when wet).
- Above all, the route should be comfortable, pleasant, and fun to ride on, and should take into account children's interests and preferences as much as possible.

IMPLEMENTATION IDEAS

- If students map their own bike routes to school, it is a good idea to have their parents look over their planning and ride the route with them. This not only double-checks the students' route choices, it also gets the parents involved in the decision to ride to school and the experience of doing so.
- For schools or communities without designated safe bicycle routes, a classroom or take-home mapping exercise can be a valuable way of discovering and documenting opportunities to improve neighbourhood bikeability. Families' suggestions and notes about areas of concern can be compiled and passed along to the school's administration or the municipality's engineering or planning department.
- Note that the best walking route isn't always the best cycling route, and vice-versa. For example, a street with a safe setback sidewalk may not have enough road space to accommodate a bike lane or cycling traffic. Even in communities or schools with designated safe walking routes, look for cycling-specific characteristics when determining their suitability as best cycling routes to school.
- Similarly, designated bike routes aren't always well suited to young cyclists or groups of students riding to school. Again, experience and observation are key to determining best cycling routes to school.

Riding for Real

On The Road

How a cyclist rides plays a large role in keeping them safe, and lets drivers know that they are skilled, confident, and belong on the road. Students should be MVP Cyclists – that is, they should be:

- **Manoeuvrable.** Always take enough room on the road to avoid potential hazards.
- **Visible.** It is important for cyclists to see around them and on the road but also important to be seen by other road users.
- **Predictable.** Predictable riders obey traffic rules. If drivers can anticipate and understand a cyclist's actions – turning, slowing down, etc. – they'll know how to react and behave accordingly.
- **Communicative.** A good rider informs other road users of their intentions before acting.

TIPS FOR BEING AN MVP CYCLIST:

- Ride one metre from the edge of the road to avoid leaves, glass, grates, and the curb.
- Bike in a straight line to be predictable and visible. Avoid weaving between parked cars and keep a safe distance from car doors.
- Always shoulder check before changing lanes or turning.
- Don't try to squeeze in when there isn't room on the road for both cyclist and cars – take a full lane or walk the bike on the sidewalk.
- Cross train and streetcar tracks at right angles, at a reduced speed, and without braking.
- Use bike maps or bike paths to ensure an enjoyable, safe, and suitable route to and from school.

- Always dress for the weather. At night, wear bright clothing and use lights.
- Obey traffic laws and posted signs – they apply to ALL road users.
- Remember that sidewalks are for pedestrians. In most places, it is illegal for cyclists to ride on the sidewalk. Cyclists who find themselves on the sidewalk must respect the right of way of pedestrians or walk their bike.
- Never overtake a car on the right hand side, especially through an intersection. Drivers won't be expecting it and often don't check this blind spot before turning.

On the Path

- On bike and multi-use paths, the general rule of thumb is that slower traffic stays to the right, while faster traffic passes on the left. That said, it is always a good idea to communicate with other path users, especially when preparing to pass.
- Save speeding and aggressive riding for races and purpose-built trails. Bike and multi-use paths are for everyone, regardless of skill level or land speed, and work best when users show courtesy and respect for one another.
- As on a road, when stopping on a bike path, move off to the side first so as not to impede "traffic".
- Use extra caution when using a path and crossing a road or street. Drivers may not be expecting traffic from the path to be traveling at bicycle speed.

IMPLEMENTATION IDEAS

- Building cyclists' road and path awareness, knowledge, and skills can be done in a fun and engaging manner. As with the "rules of the road," discussing tips and ideas for effective cycling can produce better results than simply handing them down. Classroom-based bike-themed activity sheets like crossword puzzles, word searches, and word scramblers are another fun way to present these ideas.

For bike safe activity sheets, see:

- <http://www.nhtsa.gov/people/injury/pedbimot/bike/BSKitBoth/3152BSKit/pages/Section1/Section1TOC.html>
- http://www.toronto.ca/health/pdf/bike_safety_teachers.pdf

For activities to introduce bike traffic knowledge, see:

- http://saferoutesns.ca/images/uploads/makingtracks_cycling.pdf
- <http://www.bikesense.bc.ca/ch4.htm>

For a video on smart and safe biking, see:

- http://www.youtube.com/watch?v=uBGW8j__Jsg

Pre-Ride

- Assist students with bicycle and helmet safety checks if necessary.
- Make sure students are prepared to ride: appropriate clothing, positive attitude, focused, etc.
- State that each person must think and act for him- or herself, not just follow the leader.
- Remind students that riding safely is a prerequisite for participating.

Group-Riding Techniques

- Adult supervisors / ride leaders should position themselves at the front or back of the group as needed.
- Group members need to watch out for one another – no sudden stops, communicating, leaving space between riders, etc. – but also think for themselves – not proceeding through an intersection just because the rider in front did so, watching for cars, etc. – to ride well as a group.
- If appropriate, give responsibility to students by rotating lead riders. Not all students will be suited for such roles – some will opt out, while other may require supervision – but being given responsibility in a group setting provides students with an opportunity to develop the confidence they'll need to ride independently while still allowing for guidance and oversight.
- Avoid riding on sidewalks and making illegal manoeuvres.
- When crossing major intersections or arterials:
 - » group stops in a single file;
 - » adult supervisor / ride leader rides to front of group;
 - » leader instructs first student to proceed through the intersection and wait ahead while the remaining riders cross the intersection. Be specific (e.g. have student leader wait near a parked car, driveway, mailbox, or tree).
- The ride should be stopped and problems addressed or bicycles walked if the ride leader or a participant feels uncomfortable or the group is out of control.

Debrief

- Group rides present an excellent opportunity for discussion or reinforcement of safety issues and techniques. Unless a matter urgently needs to be addressed, debrief or discuss things that might have come up during the ride once the ride has come to a natural pause or conclusion.

Fun > Safety

Giving students the skills and confidence they need to cycle safely should be a focus and desired outcome of any school cycling initiative. But all too often, safety becomes the be-all and end-all of a school's efforts with regards to cycling. An over- or exclusive emphasis on safety can effectively frame cycling as a dangerous activity and bicycles as a source of concern or fear. If the objective of a school's cycling initiative is to encourage student cycling, it is important to emphasize the positive elements of cycling even while equipping students to deal with on-street or path conditions and unsafe situations.

- Cycling is, and should be presented as, fun. Presenting the ride to school as an opportunity to have fun – rather than a dangerous activity – is often overlooked, and will make it more attractive to students.
- Proactively address traffic safety around the school to keep walking and cycling students safe. Remove the onus to “stay safe” from students and put it on those who are putting them at risk.
- Frame cycling activities, education, etc. as opportunities to have fun and build skills, rather than learn about safety and rules. Learning through enjoyment and play enhances a child's quality of life while a playful attitude will bring joy to a child's learning.
- Give students an opportunity to inform the school's cycling initiative or plans. Have student representatives on the school's planning committee or Bicycle User Group.
- The success of a school's cycling initiative should be cause for acknowledgement and celebration; the accomplishment of children getting themselves to school is inspiring as well as a fun, healthy, and empowering step towards independence.





Engaging Female Cyclists

Young women are the most under-represented demographic among cyclists. Proactively working to engage girls will help to make a school's cycling initiative more inclusive to all. Here are some strategies for engaging girls in a school's cycling initiative (adapted from the On the Move program's list of top 10 success factors in getting girls and young women active):

1. Focus on the fun and social aspects of bicycle programming. Emphasize participation over skill; celebrate accomplishments rather than winners.
2. Introduce a variety of activities. Girls and young women often assume certain types of activities are not for them – emphasizing the different types of activities or opportunities involved will allow them to better determine whether they're interested in participating.
3. Allow input in program design. This goes for working with all students: find out what aspects of cycling interest them and plan accordingly. Creating opportunities for students to plan and make decisions (Where will we ride to? How should we let other students know?) will contribute to their overall experience and create opportunities for ownership and leadership.
4. Organize rides to a destination where there will be a social event like a picnic or swim to make the ride itself more attractive and to create positive associations between riding and fun activities.
5. Provide female-only opportunities. Female students may feel uncomfortable or unwelcome to participate in activities with their male peers. Provide girls and young women with opportunities to get involved on their own or in their own way (girl-only workshops or rides, girl teams during a bike-to-school event, etc.)
6. Create a positive environment to make sure girls and young women feel safe and supported. Consider language, images, and behaviour, and the impressions they create.
7. Provide positive modelling. Create opportunities for women to inform or take leadership or mentoring roles in cycling activities, and respect the needs, interests, and experiences of all participants.

8. Teach the basics. Don't make assumptions about participants' abilities – providing opportunities to learn and develop skills creates more opportunities for participation.
9. Incorporate food and make links between food, energy, and healthy living and eating.
10. Consider aesthetics and atmosphere. Allowing girls and young women to wear their choice of safe clothing or add music to an event can create a more welcoming environment.

Modelling

Schools are educational institutions, but, outside their walls, children are always learning. The behaviour they witness from their parents, teachers and peers has a strong formative impact on their values and understanding of the world.

Parents:

- Set a positive example and be a good role model. This has been shown to have a strong impact with regards to physical activity. If parents encourage cycling but aren't participating actively, children are less likely to bike.
- Similarly, children who see their parents modelling safe cycling behaviour and wearing a helmet are more likely to adopt these habits themselves.
- Parents who are not comfortable with or confident in their cycling ability can take a cycling course to learn or refresh their own skills and awareness. They'll be a better model and chaperon when they're riding with their children.
- Show children that biking is fun. Don't focus solely on rules and hard skills – start slowly, and remember that with cycling, doing IS learning.
- Let the child choose or be actively involved in choosing their bike. This will help motivate them and they will enjoy the purchase.
- Riding a bike to school requires some initial changes in lifestyle and planning. Parents can facilitate these and be patient: as usual, the more one does it, the easier and more natural it becomes.

Teachers

- Ride to school – students will notice.
- Keep bikes visible and answer questions about them.
- Look for resources and opportunities to include cycling in classroom activities and field trips.
- Sponsor student clubs and events that promote cycling.
- When it comes to bicycle parking, consider: keeping it in the classroom or office may be safer, but using the school's racks makes a strong public statement of confidence and support.

Peers

- Bicycles have become so marginalized in many schools that promoting their use effectively means creating social change.
- Focusing on group activities provides positive social reinforcement to individual riders.
- Emphasize that students should ride with a buddy or in groups to school. This provides positive reinforcement and emphasizes the social side of bicycle riding at the same time keeping young riders safer.
- It may not have the same profile as winning a game or volunteering with the recycling club, but cycling to school in this day and age takes commitment and sets a positive example. Schools can recognize cycling students within existing student recognition schemes.

Planning For The Weather

For most cyclists, riding is a fair-weather activity. With improvements to bicycle infrastructure and technology, however, weather is becoming less of a barrier to cycling.

Low Light

When riding in low-light or -visibility conditions, cyclists should make every effort to be visible to other road users:

- Wear bright or light-coloured clothing.
- Ride a bicycle equipped with reflectors facing front, back, and both sides. Virtually all bicycles come equipped with reflectors, but adding extras (in the form of reflective stickers on a helmet, wearing reflective vests or arm-bands, etc.) never hurts.
- Have a white light facing towards the front and a red light facing towards the back of the bicycle. Flashing lights are more likely to be noticed by other road users than solid lights. In some jurisdictions, having and using a light on one's bicycle early and late in the day is required by law.

Rain

Even the most dedicated fair-weather cyclist gets caught in the rain eventually. A number of things can make this less unpleasant:

- Appropriate rain gear. A waterproof jacket is essential to keep the core warm and dry. Waterproof pants, shoe covers, helmet covers and gloves can help, too, but can also trap moisture and sweat against the cyclist's body. An umbrella is a bad idea.
- Fenders. Most of the water that ends up on a cyclist riding in the rain actually comes from the ground, kicked up by moving wheels. This water is often full of dirt and oil, making it especially unpleasant. Fenders help keep cyclists – both the one riding the bike and the one behind him/her – dry, and, on days with light rain or when riding right after it has rained, may be all one needs.

- When storing a bicycle, every bit of shelter helps. An indoor bicycle storage facility or sheltered bike rack is much more appealing to cyclists than parking their bicycle in the rain. A plastic bag wrapped over the bicycle's seat is better than nothing.
- Riding in wet weather breaks down the lubricant (usually oil) on a bicycle's chain and drive train very quickly. Students riding in wet weather will have to clean and lubricate their drive train regularly. Cleaning the rest of the bicycle – especially rims and brake pads – will keep it running smoother, longer.
- Except in the most extreme conditions, a wet road is no more slippery than a dry one. That said, it pays to be more careful when riding in the rain: visibility is often reduced; most brakes won't work as well as when dry; and there tends to be more debris on the road, increasing the likelihood of incurring a flat tire.

Cold

Riding when it gets cold can be invigorating, but it pays to be prepared. While it is important to stay warm, the act of riding generates a lot of heat. Rather than going overboard, make sure that points of high exposure, such as hands and feet, are covered, and dress in layers that can be removed as necessary.

Winter

Snow, ice, and winter conditions make all types of transportation more dangerous, and collisions between all types of road users become more common. On a bicycle, losing traction or balance can quickly lead to a fall. Cyclists should be confident of their ability, equipment, and preparations before riding in true winter conditions.

For schools, winter is a great time to build capacity and student cycling interest and knowledge. Take advantage of the "slow season" to partner with local bicycle shops on bicycle repair or maintenance workshops. Install racks or other infrastructure upgrades that will encourage cycling in the spring, and work with the municipality to ensure improved neighbourhood bikeability and traffic safety.

y Cycling Infrastructure and Facilities

A school can only encourage students and families to cycle to school in good faith if it is willing and able to support them. Investing in the proper on-site infrastructure to facilitate bicycle trips goes a long way towards making cyclists feel welcome. And compared to the resources expended by schools on accommodating cars, providing appropriate storage and end-of-trip facilities for cyclists is a bargain.



Bicycle Parking/Storage

Inadequate bike parking and fear of theft are major barriers to biking to school. Some factors to consider when planning bike parking at a school are:

- **Visibility.** Racks should be easy to spot when arriving to school and located in a visible or high-traffic location to discourage theft
- **Cover or shelter.** Bike racks and parking cyclists should be protected from the elements – cyclists are twice as likely to use a sheltered bike rack.
- **Convenience.** Racks should be easy to use, accessible, have good clearance from nearby structures to allow for manoeuvrability, and be in a prominent place.
- **Practicality.** A school's bike racks should allow for the frame and a wheel to be attached, and should be able to accommodate different types of bicycle frames and locks.
- **Security.** An indoor facility is the most secure form of bicycle parking. Some schools may unknowingly have designated indoor bicycle storage capacity – a number of provinces have mandated its inclusion in new public buildings and substantial renovations.

Capital Bike Walk's Bike Parking Manual provides details on best racks, site planning, and design for bicycle parking and other destination facilities.

<http://www.capitalbikeandwalk.org/bike-parking.php>



End-of-Trip Facilities

End-of-trip facilities includes everything from designated showers and change rooms for cyclists, which are especially helpful to teachers who may have longer commutes, to safe places to store and dry cycling gear. These facilities should be easily accessible from bicycle storage facilities. They help facilitate bicycle commuting, and their simple existence displays a school's support of transportation cycling.

For organized events or activities, healthy food and water provides and replenishes student energy. An event like a Bikers' Celebration or Bike-to-School Day should include refreshments, especially as students and families may not realize what kind of an appetite even a short ride can work up.

Access to the tools and supplies needed to perform maintenance and basic repairs can help keep a school's cyclists rolling. An appropriate and accessible tool kit, combined with basic instruction and/or on-site supervision and assistance, provides cycling students and teachers with an on-site resource to solve minor mechanic issues and keep their bicycles running smoothly. The following items can be included:

- Floor pump
- Flat repair kit, including tire levers
- Rags and brushes for cleaning (old donated clothes and toothbrushes work well for this purpose)
- A non-toxic and biodegradable de-greaser works for greasy parts and hands
- Bicycle-specific multi-tool, or a set of Allen keys and a wrench

Transport Canada's End-of-Trip Facilities Guide is intended to help municipalities create appropriate and attractive bicycle parking and related facilities that will encourage bicycle use. The guide is a useful resource for designing attractive long-term bicycle parking facilities that will encourage students and families to commute by bicycle: <http://www.tc.gc.ca>.

Resources

CHILD- AND YOUTH-FRIENDLY LAND-USE AND TRANSPORT PLANNING GUIDELINES

- A set of guidelines for transportation and land-use planners tailored to each of Canada's provinces. Developed as tools for achieving transportation and land-use arrangements that meet the needs of children and youth.

<http://www.kidsonthemove.ca>

SCHOOL TRAVEL PLANNING

- School Travel Planning works to get more families walking and wheeling to/ from school by bringing together community stakeholders to identify barriers to active transportation for each school and develop a written action plan.

<http://www.saferoutestoschool.ca>

NEIGHBOURHOOD BIKEABILITY AUDIT

- How bikeable is a community? The Bikeability Checklist can help determine the answer. It provides insightful questions that will help assess a neighbourhood's bikeability. In addition to the questions, the Checklist provides both immediate answers and long-term solutions to potential problems it helps to identify.

<http://www.bicyclinginfo.org>

DESIGN CENTRE FOR CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

- Crime prevention through environmental design (CPTED) is an approach that uses design of the built environment to make spaces safer. Otherwise, desirable features on greenways, bike routes, or near bicycle parking can have the unintended effect of making cyclists uncomfortable or putting them at risk. A school district's maintenance staff or municipality's parks department should be able to evaluate facilities for compliance with CPTED principles. <http://www.designcentreforcpted.org>

METRAC COMMUNITY SAFETY AUDIT

- METRAC's Community Safety Audit is a tool to help people assess the safety of spaces they use. It is based on perspectives of people who live, work and play in an area, and on the fact that they are safety experts of the area. It recognizes that women and other vulnerable groups most often feel unsafe and it helps people to come up with safety-enhancing ideas. <http://www.metrac.org>

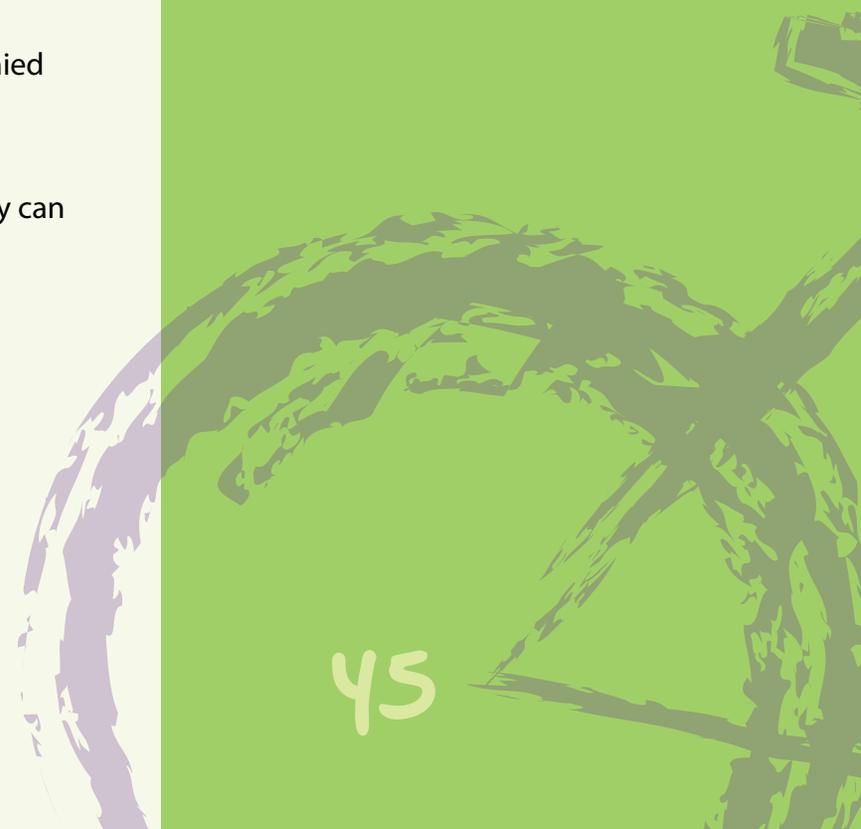
5 Policies

It is difficult to encourage students to ride to school if there are rules or laws actively or tacitly creating barriers to keep them from doing so. Schools interested in increasing bicycle trips should examine existing policies and consider amending or enacting new policies that support student cycling.

School/School Board

Many schools and school boards have instituted policies that prevent or discourage students from cycling to school, either intentionally or indirectly, such as:

- Removing bike racks or making it difficult for schools to request or install new ones.
- Prohibiting riding to school or on school property.
- Setting age restrictions on students cycling to school, even when accompanied by parents.
- Pre-determining (with parents) how students can get to and from school.
- Requiring students to transport more materials to and from school than they can comfortably carry while walking or cycling.
- Closing neighbourhood schools in favour of larger district schools.
- Subsidizing staff costs associated with travel by car, but not other means.



Schools can create or change policies to encourage and support student cycling by:

- Providing early dismissal for cyclists and pedestrian students to ensure they can exit school grounds safely before car traffic gets too heavy.
- Ensuring that school uniforms are suitable for cycling and make students visible to drivers in low-light situations.
- Developing a school travel plan: this includes identifying the school's transportation challenges and taking specific actions to overcome them.
- Providing appropriate bicycle parking: accessible, sheltered or indoor, secure, and visible to deter damage, vandalism and theft.
- Developing safe walking and cycling routes to school within the school catchment area, with signs or maps designating the routes, and making sure families (especially new families) are aware of these routes.
- Considering designating a point of access to school grounds for cyclists that keeps them away from the major vehicle traffic and drop-off areas and approach routes. One-way streets and no-stopping zones work well.
- Working with the community or municipality to improve traffic safety, pedestrian and cycling infrastructure, and greenways around the school.
- Prioritizing enrolment for students and families within the catchment to ensure the majority of the school's population lives within walking or cycling distance.
- Providing positive modelling by providing incentives and resources to encourage staff to ride their bicycles for transportation. For example, membership in a local car-share program provides staff with flexibility and peace of mind in case of emergencies, while providing an opportunity to take a bicycle-skills program as professional development could give staff interested in commuting by bicycle the confidence to do so.

Municipality

Municipalities can support and encourage cycling to school by:

- Developing walking and cycling route networks with schools as network nodes. The benefits of this approach extend beyond staff, students, and their families, as schools are often hubs and resources within their communities. Provide signage or maps designating safe walking and cycling routes to school.
- Working with schools to improve traffic flow and safety, pedestrian and cycling infrastructure, and greenways.
- Ensuring that school siting accounts for and prioritizes appropriate and safe cycling routes to school.
- Laws and bylaws can impact not only cycling behaviour, but also how a community perceives cycling.
- Helmet laws: About half of Canada's provinces have some type of mandatory helmet law, while some Canadian cities have created or taken a stand against these laws. There is no serious argument against the wearing of helmets, but there is growing evidence that mandatory helmet laws discourage cycling. According to a paper published by the Canadian Medical Association, "data from Australia and now Nova Scotia suggest that legislation increases helmet use but also reduces the numbers of cyclists."
- Riding on streets and sidewalks: Some jurisdictions in Canada allow some or all cyclists to ride on the sidewalk. Whether or not this is allowed or encouraged in a particular community, it is a good idea to know the facts about local laws and bylaws and make sure student cyclists and their families do too.



- School zone speeds: Most – but not all – Canadian provinces and cities have mandatory school-zone speed limits. Driving at a reduced speed allows drivers to react more quickly and effectively in an emergency, and reduces the risk of injury and fatality in a collision. In municipalities that do not have mandated reduced school-zone speed limits, advocating for their adoption is an important first step towards improving school-zone traffic safety and protecting walking and cycling students.
- Official Community Plans are an excellent place for municipalities to articulate their plans or goals with regards to cycling- and school-related traffic safety. The drafting and revision phase of such plans is also a good opportunity for school-cycling advocates to encourage having cycling included in an important municipal document that will inform future policy and planning.

6 Resources to help support and encourage riding to school

Materials

Books

- Best, Cari, Sally Jean, the Bicycle Queen. Farrar, Straus & Giroux, 2006
- Robinson, Laura, Cyclist Bikelist: The Book for Every Rider. Toronto: Tundra books, 2010

Lesson plans and curriculum

- VACC's Ride the Road: <http://vacc.bc.ca>
- EnerAction's Ride, Roll and Stroll:
<http://www.greenlearning.ca/eneraction/teacher-materials>
- Liveable Streets Education: <http://streetseducation.org>
- Bicycle Transportation Alliance Neighbourhood Navigators:
<http://www.walknbike.org/neighborhood-navigators>
- Bikes Not Bombs Earn-A-Bike Instructor Manual:
<http://bikesnotbombs.org/EarnABike>
- Bicycle Transportation Alliance's Strategies to Cycling with Youth:
<http://www.bta4bikes.org/docs/cyclingwithyouth.doc>
- Bike 'n Hike to School:
http://www.ecoact.org/PDF/SRTS/Teacher_Activities_Lessons_Packet.pdf



Media

- Bike fun with Portland Mayor and grade 4 class:
<http://www.portlandonline.com/transportation/index.cfm?a=304848&c=50052>
- Ryan Leech, professional Mountain Biker, talks about bike commuting:
<http://www.youtube.com/watch?v=Fc0Xf5XKB84>
- Jackson Goldstone takes the scenic route to school:
http://www.youtube.com/watch?v=Ga72-ASP1uM&feature=player_embedded

Websites

- An online cartoon guide to bicycle safety for young cyclists
<http://www.mto.gov.on.ca/english/safety/cycling/youngcyclist.shtml>
- Bicycle diagrams in many languages
http://commons.wikimedia.org/wiki/File:Bicycle_diagram-en.svg
- Bicycle Safety Activity Kit
<http://www.nhtsa.gov/people/injury/pedbimot/bike/BSKitBoth/3152BSKit/pages/Section1/Section1TOC.html>
- An online guide to the systems and physics of bikes, created for students by students <http://library.thinkquest.org/J002670/parts.htm>
- Victoria Transportation Policy Institute's School Transport Management guide
<http://www.vtpi.org/tdm/tdm36.htm>
- Bicycle Tutor is an online bicycle repair DIY resource, with great online videos, tutorials and forums <http://bicycletutor.com>
- Danny and the Demon Cycle comic book PSA <http://www.ep.tc/problems/31/03.html>

Online Games and Tools

- HASTE MyTravel Calculator (For B.C.) <http://www.hastebc.org/mytravel>
- HASTE Online Route Planner (For B.C.) <http://www.hastebc.org/routeplanner>
- Google Maps tool Directions for Cyclists function (For Vancouver; Kelowna, B.C.; Edmonton; Calgary; Winnipeg; Waterloo, Ont.; Toronto; Ottawa; and Gatineau, Que.) <http://www.map.google.com>
- Tutorial on creating maps with Google Maps <http://maps.google.com/help/maps/mymaps/create.html>
- Google Maps Pedometer: <http://whhttp://www.gmap-pedometer.com>
- Bikeability's Find the Best Route Game: <http://www.dft.gov.uk/bikeability/schools/games/find-the-best-route>

Program Models

Earn-a-Bike

- Earn a Bike is a popular program model that allows young people to earn a bicycle for themselves. The program focuses on demystifying bicycle mechanics, building hard and soft skills, and encouraging personal responsibility, along with introducing youth to the fun and benefits associated with cycling. Excellent and comprehensive resources are readily available for getting an Earn-a-Bike program started; however, running Earn-a-Bike requires access to a full set of bicycle repair tools, donated bicycles, and the involvement of a skilled bicycle mechanic.

Trips for Kids

- Trips for Kids is a non-profit with chapters all over North America that provides mountain bike outings and environmental education for kids who would not otherwise be exposed to such opportunities. Trips for Kids supports local groups creating chapters, providing resources and proven models while allowing chapters to tailor their work to best fit the needs of their community.

Bike Club

- A youth bike club associated with a school or community centre can provide a strong platform for building bicycle skills and interest. Bike clubs can be organized or tailored to suit almost any circumstance; the form a bike club takes will depend on available resources and student/rider interest. See the School Bike Club entry in the Programs section for more information and ideas.
- Training/certification

CAN-BIKE

- The Canadian Cycling Association's CAN-BIKE program is a series of courses on all aspects of cycling safely and enjoyably on the road; it is oriented toward recreational and utilitarian cycling. The CAN-BIKE cycling safety program provides a nationally standardized set of courses that is taught through a variety of organizations that are interested in education, safety, and health.
- LCI: League (of American Bicyclists) Cycling Instructor
- The League of American Cyclists is a non-profit membership organization which promotes cycling for fun, fitness, and transportation. Many cycling organizations in the U.S. offer League Cycling Instructor training. Certified instructors can teach Smart Cycling classes to children as well as adults. Note: this is an American resource, but it may be more accessible to some Canadian communities than CAN-BIKE instruction.

Winterborne Cycles

- Winterborne Bicycle Institute is the only full-time and accredited bicycle mechanic training centre in Canada. Located in Guelph, Ontario, they offer courses and workshops on bicycle building, repair, and maintenance for everyone from professional to aspiring mechanics.

Community Resources

- Groups and individuals in the community can play an important role in supporting and resourcing a school's cycling initiative. It is important to make sure that partners are all on the same page and aware of what the school is trying to accomplish. Community volunteers can provide expertise, programs and presentations, positive modelling, and additional safety to group rides and events.

Bike shops

- Bike retailers have a direct stake in growing the local cycling market and their staff will usually be avid cyclists, making local shops a natural partner for a school cycling initiative.

Law enforcement

- Police and bylaw officers are charged with ensuring traffic and community safety. They often have the resources and experience, and sometimes a mandate, to provide cycling safety information and instruction.

Cycling advocacy groups

- Local and national bicycle advocacy groups can be a great resource for schools working to support and encourage cycling. They often provide cycling instruction and other programming to adults and children.
- Municipal planning/engineering/transportation/parks and recreation staff
- As local governments start to proactively address environmental, accessibility, transportation, and community health issues, their programs and staff will become increasingly able to resource and support school cycling initiatives.



Cycling clubs

- Cycling clubs are groups of cyclists who come together to promote and support cycling through a range of activities. Comprised of enthusiastic, experienced, and organized cyclists, they can be an excellent source for resources, volunteers, logistical support, and advice. A comprehensive online list of Canadian cycling clubs can be found here: http://www.canadatrails.ca/biking/bk_clca.html

Parents

- There may be no better metaphor for parenting than the act of teaching a child how to ride a bicycle. Parents provide guidance, instruction and protection, but at some point children must be allowed to try, fail, and ultimately succeed on their own, at which point a whole new world of freedom and independence opens up to them. Safety concerns can cause parents to question a school's cycling initiative. Getting them involved not only provides program/event support, it also gives them a chance to watch their child's cycling skills and confidence improve. Parents can also be very strong advocates of traffic safety around schools.

Active and Safe Routes to School programs

- Many Canadian provinces have organizations that promote and support Active and Safe Routes to School. Most of these organizations are part of and can be found through the Canadian Partnership on Active and Safe Routes to School: <http://www.saferoutestoschool.ca/partnership/default.asp>



