Increasing Active Transportation – Case Study

The City of Saskatoon has a Low Emissions Community Plan. Among other things, the plan has a goal to fund and implement improved cycling and walking infrastructure to encourage active transportation. Greenhouse gas emissions reductions between 2020 and 2050 from this initiative are estimated at 287,000 tonnes of CO_{2e}.

Improve Cycling and Walking Infrastructure

Most trips shorter than 2km can usually be made by walking and most trips shorter than 5km by biking. Complete, compact communities and the correct infrastructure such as sidewalks and bike lanes are key components to making trips of these distances possible via active transportation. With investments in pedestrian and cycling infrastructure and programs like bike sharing, active transportation becomes more viable.

Action	Milestone Target & Emissions Reduced 2020-2050 (tonnes CO_2e)
23. Fund and implement improved cycling and walking infrastructure to encourage active transportation. *Source: Low Emissions Community Plan, page 65*	Achieve a 20% mode shift to active transportation by 2030, 30% by 2050. The existing goal in the active transportation plan is 24% mode shift by 2045. 287,000 tonnes CO_2e

How would you suggest getting more people to use active transportation to get to your school? The Saskatoon Public Schools' Move to Grow initiative has neighbourhood maps, as well as other information to support active transportation. Find your school map, or use Google Maps to find your neighbourhood, and answer the following questions.

- Track your current route to school.
- Find the distance from your home to school. (Google Maps can help with this)
- Do a quick survey of your classmates – how many live within a 2 km walk, or 5 km bike to school?
- Is the route to school safe for walking, biking, or other active transportation? (i.e. are there sidewalks, crosswalks, stop signs or lights, or bike paths along the route)
- Where would you put additional bike lanes or shared bike/walking paths to make active transportation easier? Add them to the map.

Think/Share:
- What are some of the challenges/barriers to adding new bike lanes and shared paths in this neighbourhood?
- List other barriers to students and teachers using active transportation. Do you think that teachers have different barriers than students do? Discuss.

- List some possible solutions to each of these issues.
- How do you and your classmates currently get to school? Survey the group for your mode of transportation for the past 3 days. Graph your results.

> The goal in the Low Emissions Community Plan is a 20% mode shift (for example, a change from cars to active transportation) by 2030, 30% by 2050. That would achieve a greenhouse gas emissions reduction of 287,000 tonnes of CO_{2e}/year.

How does the above plan of more people using active transportation fit into the goal of *sustainability:* including a healthy environment, a healthy society, and a healthy economy?

Think/Share:
- What are some examples of environmental benefits of more people using biking or walking to get around?
- What are some examples of health benefits of more people using biking or walking to get around?
- What are some examples of social benefits of more people using biking or walking to get around?
- What are some examples of economic benefits of more people using biking or walking to get around?

Make a plan:
- Look at the graph you made of how your classmates got to school in the last 3 days.
- Decide on a reasonable target for improving active transportation. I.e. How many students could walk or bike to school more than they already do? How many more days per week could they walk or bike?
- What supports will students need in order to be successful? Remember this information: Move to Grow.
- Try your active transportation plan for 2 weeks. Each day record the number of students who used active transportation to get to school.
- Graph your new results.
- How did you do? How can you support more students to use active transportation to get to school?

Curriculum Connections

Grade 4 English Language Arts CR4.2 View and respond to visual and multimedia texts (including graphs, charts, diagrams, maps, multimedia DVD, websites, television programs, advertisements, posters), explaining the creator's technique and the impact on viewers. **CC4.1** Compose and create a range of visual, multimedia, oral, and written texts that explore: identity (e.g., Expressing Myself), community (e.g., Celebrating and Honouring Others), social responsibility (e.g., Within My Circle) through personal experiences and inquiry. **CC4.2** Create a variety of clear representations that communicate straightforward ideas and information relevant to the topic and purpose, including short, illustrated reports, dramatizations, posters, and other visuals such as displays and drawings.
Health Education USC4.1 Assess what healthy eating and physical activity mean for pre/adolescence. **AP4.1** Design and apply, with guidance, two four-day action plans that require communication related to healthy eating and physical activity, prevention/ management of health challenges, negotiating disagreements, safety and protection, personal identity, and stressors.
Mathematics P4.1 Demonstrate an understanding of patterns and relations by: identifying and describing patterns and relations in a chart, table or diagram, reproducing patterns and relations in a chart, table, or diagram using manipulatives, creating charts, tables, or diagrams to represent patterns and relations, solving problems involving patterns and relations
SP4.1 Demonstrate an understanding of many-to-one correspondence by: comparing correspondences on graphs, justifying the use of many-to-one correspondences, interpreting data shown using a many-to-one correspondence, creating bar graphs and pictographs using many-to-one correspondence.
Physical Education PE4.9 and refine selected movement skills, tactics, and strategies while participating in: low-organizational, inventive, and cooperative games (e.g., tag games, relay race, prisoner's base), small-sided and lead-up target games (e.g., bowling, curling, golf, bocce ball), small-sided and lead-up striking/fielding games (e.g., long ball, kick ball, softball), small-sided and lead-up invasion/territorial games (e.g., two-on-two, three-on-three games using skills from games such as soccer, basketball, and soft lacrosse), alternate environment activities (e.g., hiking, aquatics, skating, snowshoeing, orienteering, cross-country skiing, tobogganing, cycling, tracking).
Social Studies RW4.1 Analyze the strategies Saskatchewan people have developed to meet the challenges presented by the natural environment.

Grade 5 English Language Arts: CC5.1 Compose and create a range of visual, multimedia, oral, and written texts that explore: identity (e.g., What Should I Do), community (e.g., This is Our Planet), social responsibility (e.g. Teamwork) and express personal thoughts shaped through inquiry. **CC5.2** Demonstrate a variety of ways to communicate understanding and response including illustrated reports, dramatizations, posters, timelines, multimedia presentations, and summary charts. **CC5.3** Speak to express and support a range of ideas and information in formal and informal speaking situations (e.g., giving oral presentations and reports, retelling a narrative, explaining a display to others, working in groups) for particular audiences and purposes.
Health Education AP5.1 Design and implement, with guidance, two five-day action plans that embrace health opportunities or address health challenges related to personal eating practices, changes of puberty, impact of illness/disease, identity and well-being, violence, peer pressure, and self-regulation.
Mathematics SS5.2 Demonstrate understanding of measuring length (mm) by: selecting and justifying referents for the unit mm, modelling and describing the relationship between mm, cm, and m units. **SP5.1** Differentiate between first-hand and second-hand data. **SP5.2** Construct and interpret double bar graphs to draw conclusions. **SP5.3** Describe, compare, predict, and test the likelihood of outcomes in probability situations.
Physical Education PE5.7 Refine, alone and with others, selected movement skills, tactics, and strategies while participating in: small-sided and lead-up net/wall games (e.g., badminton, tennis, table tennis, one bounce, three-on-three volleyball, pickleball, paddle ball, and critically reflect on chosen movement skills, tactics, and strategies used in: small-sided and lead-up target games (e.g., bowling, curling, golf, bocce ball, archery), small sided and lead-up striking/fielding games (e.g., long ball, softball, kickball, cricket), small-sided and lead-up invasion/territorial games (e.g., two-on-two, three-on-three games using skills from games such as soccer, basketball, and soft lacrosse), small-sided and lead-up alternate environment activities and games (e.g., hiking, aquatics, orienteering, skating, roping, tobogganing, cross-country skiing, downhill skiing, tracking, cycling, wall climbing, paddling). **PE5.11** Examine, evaluate, and communicate the influence of Canadians, both historically and currently, on the development of the numerous options for participation in movement activities in this country.
Social Studies RW5.1 Explain the importance of sustainable management of the environment to Canada's future.

Grade 6 Health Education AP6.10 Design and implement (with guidance) two six-day action plans that reflect affirmation of personal standards related to decision making, relationships, non-curable infections, stress management, body image, safety, and health promotions.

Mathematics P6.1 Extend understanding of patterns and relationships in tables of values and graphs. **SP6.1** Extend understanding of data analysis to include: line graphs, graphs of discrete data, data collection through questionnaires, experiments, databases, and electronic media, interpolation and extrapolation.

Physical Education PE6.10 Apply controlled use of selected movement skills and variations (i.e., locomotor, non-locomotor, and manipulative skills) as well as safe and environmentally friendly behaviours while participating in a variety of: alternate environment activities (e.g., skating, cross-country skiing, downhill skiing, snowshoeing, roping, cycling, hiking, kayaking, aquatics, tobogganing, orienteering), body management activities including dance and educational gymnastics, as well as others (e.g., pilates, wrestling, skipping, track and field, yoga, aerobics).

Social Studies RW6.2 Contribute to initiating and guiding change in local and global communities regarding environmental, social, and economic sustainability.

Grade 7 Health Education AP7.10 Design, implement, and evaluate three six-day action plans that demonstrate personal commitment to responsible health action related to blood-borne pathogen information, safety practices, harmonious relationships, food choices, interpersonal skills, and morality.

Mathematics P7.1 Demonstrate an understanding of the relationships between oral and written patterns, graphs and linear relations. **SP7.1** Demonstrate an understanding of the measures of central tendency and range for sets of data. **SP7.2** Demonstrate an understanding of circle graphs.

Physical Education PE7.9 Utilize selected movement skills and combinations of skills (i.e., locomotor, non-locomotor, and manipulative) to participate in a variety of: alternate environment activities (e.g., skating, cross-country skiing, swimming, snowshoeing, cycling, hiking, tracking, skateboarding, roping, canoeing, downhill skiing, orienteering), body management activities including dance and educational gymnastics, as well as others (e.g., wrestling, track and field, pilates, yoga, aerobics).

Social Studies DR7.1 Analyze and use various types of maps (that provide differing perspectives and information for differing purposes) in order to situate current issues in Canada, and in a selection of Pacific Rim and northern circumpolar countries. **RW7.3** Assess the ecological stewardship of economies of Canada and the circumpolar and Pacific Rim countries.

Grade 8 Health Education USC8.6 Examine and assess the concept of sustainability from many perspectives, and develop an understanding of its implications for the well-being of self, others, and the environment. **AP8.10** Design, implement, and evaluate three seven-day action plans that establish multiple supports for responsible health action related to family roles and responsibilities, non-curable infections/diseases, violence and abuse, body image, sustainability, and sexual health.

Mathematics SP8.1 Analyze the modes of displaying data and the reasonableness of conclusions.

Physical Education PE8.8 Apply and adapt selected activity-related skills (e.g., carrying, paddling, gripping, hanging, wheeling, digging, fire building, snow ploughing, compass reading) and strategies required for participation in alternate environment activities (e.g., backpacking, hiking, cycling, overnight camping, canoeing, snowshoeing, wall climbing, in-line skating, skate boarding, cross-country skiing, tracking, roping, dog sledding, skating, orienteering, downhill skiing, tobogganing, Quincy building). **PE8.14** Analyze the influences of past and present social, cultural, and environmental perspectives on the need for recent physical movement initiatives (e.g., in motion, ParticipAction, Indigenous Games, walking paths) that support personal, family, and community active living and well-being.

Social Studies RW8.3 Critique the approaches of Canada and Canadians to environmental stewardship and sustainability.