

An Educator's Guide to The City Nature Challenge

What is the City Nature Challenge?

The City Nature Challenge is an annual four-day global event where cities across the world explore their local environments to compete to see which city can gather the greatest number of wildlife observations, find the most species and engage the most people!

EcoSpark is proud to be the regional organizer for the city of Toronto and the Greater Toronto Area. This event is a great way to connect your students with nature and collaborate with experts all around the world! By engaging your class in the City Nature Challenge, not only will they get to learn about the local nature around them, they will also contribute real scientific data that will help scientists study and protect the biodiversity of species in our cities!

EcoSpark has created this step-by-step educators guide that provides information on how to engage your class in the City Nature Challenge and integrate the event into your curriculum.

Getting Your Class Involved Step-by-Step Guide

Ready to engage your class in real citizen science and help put Toronto and the GTA on the map to win the title of wildest city in Canada? If so, follow the **6 easy steps** below to begin!

Step 1: Register and Create an iNaturalist Account

Getting your class involved in the City Nature Challenge has never been easier! Begin by [registering your class here](#) for the event, then visit www.inaturalist.org to create an iNaturalist account. Participants can also create an account by downloading the application from the [Apple](#) or [Google Play](#) store to any electronic device.

Educators can choose to create a class iNaturalist account in which the login information can be shared with the students. Be sure to monitor the students activities carefully in order to ensure the iNaturalist best practice as outlined in the [iNaturalist Teacher's Guide](#) are being followed. If you choose to reuse this account in the future, consider changing the password. Alternatively, students 13 years or older can make their own account to submit their observations. For more information on how to use iNaturalist refer to the "[Getting Started Guide](#)".

Remember to join [EcoSpark's iNaturalist account](#) to continue submitting wildlife observations and to help contribute scientific data to support biodiversity research in the GTA!

Step 2: Getting Ready to Bring the Class Outside

There are a few key things to keep in mind when preparing your class to go outside to begin collecting observations for the City Nature Challenge.

- Choosing a Suitable Location
 - Determine a suitable area for you and your students to explore and observe local biodiversity. This can be done as a class or alone as the educator. Look for areas on your school grounds or nearby greenspaces such as: forest, woodlots,

unmowed/weedy grass, gardens, fallen logs and/or meadow areas that provide good habitat for wildlife.

- Time of Day and Weather
 - Consider the time of day you and your students will go outside to collect observations. It is important to note that certain species may be more active in the morning (i.e. birds) while others may be more active in the afternoon (i.e. insects on warm days).
- Outdoor Behavioral Expectations
 - When working outside it is important to set clear behavioral expectations and provide concise instructions. Ensure that the boundaries of the location you are observing are clear and well defined. Review the observation and data collection procedure in advance. Remind the students to be respectful of the natural environment (i.e. do not pick up any species, remind on trails, leave no trace behind). Finally, establish a signal (i.e. sound, call and response) that you will use to grab the students attention and have them wrap up their observations to meet at a central location.
- Equipment
 - Ensure that all students are dressed appropriately for the weather and outdoor activities. Depending on your access to technology, equipment required may vary.
 - **Technology Access:** Ensure that the iNaturalist application is downloaded to the electronic device prior to collecting observations. Depending on the number of devices, the educator can choose to facilitate the data collection submissions to iNaturalist or the students can upload their observations themselves.
 - **No Technology Access:** If you do not have access to electronic devices that you can take out in the field, students can record their observations using paper forms and submit their findings when they return to the classroom.

For more tips on how to prepare your students for outdoor observations check out the City Nature Challenge's "[Tips for Teaching and Managing Students Outside](#)" guide.

Step 3: Observe Local Wildlife and Share

Safely explore the nature within your chosen site with your students. Remind the students to focus on the insects, birds, weeds, and other wild plants, animals and fungi they see, rather than cultivated species like garden flowers or domestic animals (i.e. dogs or cats). Have the students take a picture of what they find using a camera or upload it directly to your classes iNaturalist account depending on access to available technology. Be sure to remind the students to record the location of the critter or plant they observe. If there is no access to technology, have the student record their observations using paper datasheets to draw and describe what they observed.

Step 4: Share Your Classes Observations

Submit your students observations by uploading them to your classes iNaturalist account on a computer after the activity, or in real time using the app if your school has access to mobile electronic devices (i.e. iPad, tablet, cell phones). For additional instructions on how to submit observations visit the iNaturalist "[Getting Started Guide](#)".

Step 5: Extend the Learning Experience

Explore Observation Data

- Join EcoSpark’s [iNaturalist page](#) for fascinating biodiversity information and daily local updates! Check back on iNaturalist May 3 - 8 to help identify what species were found. No special skills are required to get involved in exploring the data! EcoSpark will showcase local results and species totals for this collaborative global event.
- Explore [EcoSpark’s GeoHub](#) to view and compare past participant biodiversity observations.

Register for a EcoSpark’s School Watch Session

- Book an in-person or remote interactive EcoSpark [School Watch session](#) to engage your class in citizen science activities you can use to monitor wildlife on school grounds or try at home!

Step 6: Integrating the Curriculum

“Learning outside can be an enriching way for students to investigate questions, apply concepts, and engage beyond the barriers of the classroom” (City Nature Challenge, 2018). Use the table below to see how you can integrate the City Nature Challenge into your curriculum to enhance students' learning experience!

Elementary Grade 6-8 Science Curriculum Connections		
Strand	A. STEM Skills and Connections	B. Life Systems
6 th Grade	<ul style="list-style-type: none"> ● A.1. STEM Investigation and Communication Skills (A1.1, A1.4, A1.5) ● A3. Applications, Connections, and Contributions (A3.3) 	<ul style="list-style-type: none"> ● B.1. Relating Science and Technology to our Changing World (B1.1 & B1.2) ● B2. Exploring and Understanding Concepts (B2.1, B2.2, B2.3, B2.4, B2.5, B2.6, B2.7 & B2.8)
7 th Grade	<ul style="list-style-type: none"> ● A.1. STEM Investigation and Communication Skills (A1.1, A1.4, A1.5) ● A3. Applications, Connections, and Contributions (A3.3) 	<ul style="list-style-type: none"> ● B.1. Relating Science and Technology to our Changing World (B1.1 & B1.2) ● B2. Exploring and Understanding Concepts (B2.7 & B2.8)
8 th Grade	<ul style="list-style-type: none"> ● A.1. STEM Investigation and Communication Skills (A1.1, A1.4, A1.5) ● A3. Applications, Connections, and Contributions (A3.3) 	

Secondary Grade 9 and 10 Science Curriculum Connections		
Stand	A. Scientific Investigation Skills & Career Exploration	B. Biology
9 th Grade	<ul style="list-style-type: none"> ● A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) ● A2. Career Exploration (A2.1) 	<ul style="list-style-type: none"> ● B1. Relating Science to Technology, Society, and the Environment (B1.1, B1.2) ● B2. Developing Skills of Investigations and Communication (B2.2, B2.4, B2.5) ● B3. Understanding Basic Concepts (B3.1, B3.3, B3.5)
10 th Grade	<ul style="list-style-type: none"> ● A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) ● A2. Career Exploration (A2.1) 	

Secondary Grade 11 Science Curriculum Connections			
Course	A. Scientific Investigation Skills and Career Exploration	B. Diversity of Living Things	F. Plants: Anatomy, Growth, and Function
11 th Grade University Preparation	<ul style="list-style-type: none"> ● A1. Scientific Investigation Skills (A1.1, A1.7, A1.8, A1.10) ● A2. Career Exploration (A2.1) 	<ul style="list-style-type: none"> ● B1. Relating Science to Technology, Society, and the Environment (B1.1, B1.2) ● B2. Developing Skills of Investigation and Communication (B2.2, B2.4) ● B3. Understanding Basic Concepts (B3.1, B3.5) 	<ul style="list-style-type: none"> ● F1. Relating Science to Technology, Society, and the Environment (F1.1) ● F2. Developing Skills of Investigation and Communication (F2.2) ● F3. Understanding Basic Concepts (F3.3, F3.5)
11 th Grade College Preparation	<ul style="list-style-type: none"> ● A1. Scientific Investigation Skills (A1.1, A1.7, A1.8, A1.10) ● A2. Career Exploration (A2.1) 		<ul style="list-style-type: none"> ● F1. Relative Science to Technology, Society, and the Environment (F1.1, F1.2) ● F3. Understanding Basic Concepts (F3.4)

Grade 11 Environmental Science Curriculum Connections			
Course	A. Scientific Investigation Skills and Career Exploration	B. Scientific Solutions to Contemporary Environmental Challenges	D. Sustainable Agriculture and Forestry
11 th Grade University College Preparation	<ul style="list-style-type: none"> • A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) • A2. Career Exploration (A2.1) 	<ul style="list-style-type: none"> • B1. Relating Science, to Technology, Society, and the Environment (B1.1) • B3. Understanding Basic Concepts (B3.1, B3.5) 	<ul style="list-style-type: none"> • D2. Developing Skills of Investigation and Communications (D2.6) • D3. Understanding Basic Concepts (D3.2,D3.5)
Course	A. Scientific Investigation Skills and Career Exploration	B. Human Impact on the Environment	E. Natural Resource Science and Management
11 th Grade Workplace	<ul style="list-style-type: none"> • A1. Scientific Investigation Skills (A1.1, A1.10) • A2. Career Exploration (A2.1) 	<ul style="list-style-type: none"> • B1. Relating Science to technology, Society, and the Environment (B1.1) • B3. Understanding Basic Concepts (B3.6) 	<ul style="list-style-type: none"> • E1. Relating Science to Technology, Society, and the Environment (E1.1) • E2. Developing Skills Of investigation and Communication (E2.2, E2.3, E2.4) • E3. Understanding Basic Concepts (E3.2, E3.4, E3.5,E3.6)

Grade 12 Science Curriculum Connections		
Course	A. Scientific Investigation Skills and Career Exploration	F. Population Dynamics
12 th Grade Biology University Preparation	<ul style="list-style-type: none"> • A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) • A2. Career Exploration (A2.1) 	<ul style="list-style-type: none"> • F1. Relating Science to Technology. Society, and the Environment (F1.1)
12 th Grade University/College Preparation	<ul style="list-style-type: none"> • A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) • A2. Career Exploration (A2.1) 	
12 th Grade Workplace	<ul style="list-style-type: none"> • A1. Scientific Investigation Skills (A1.1, A1.8, A1.10) • A2. Career Exploration (A2.1) 	

Grade	Science
6	<p><u>A. STEM Skills and Connections</u></p> <ul style="list-style-type: none"> ● A.1. STEM Investigation and Communication Skills <ul style="list-style-type: none"> ○ A1.1, A1.4, A1.5 ● A3. Applications, Connections, and Contributions <ul style="list-style-type: none"> ● A3.3 <p><u>B. Life Systems</u></p> <ul style="list-style-type: none"> ● B.1. Relating Science and Technology to our Changing World <ul style="list-style-type: none"> ○ B1.1 & B1.2 ● B2. Exploring and Understanding Concepts <ul style="list-style-type: none"> ● B2.1, B2.2, B2.3, B2.4, B2.5, B2.6, B2.7 & B2.8
7	<p><u>A. STEM Skills and Connections</u></p> <ul style="list-style-type: none"> ● A1. STEM Investigation and Communication Skills <ul style="list-style-type: none"> ○ A1.1, A1.4, A1.5 ● A3. Applications, Connections, and Contributions <ul style="list-style-type: none"> ○ A3.3 <p><u>B. Life Systems</u></p> <ul style="list-style-type: none"> ● B2. Exploring and Understanding Concepts <ul style="list-style-type: none"> ○ B2.7 & B2.8
8	<p><u>A. STEM Skills and Connections</u></p> <ul style="list-style-type: none"> ● A1. STEM Investigation and Communication Skills <ul style="list-style-type: none"> ○ A1.1, A1.4 & A1.5 ● A3. Application, Connections, and Contributions <ul style="list-style-type: none"> ○ A.3.3
9	<p><u>Academic Stream</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8 & A1.10, ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>B. Biology: Sustainable Ecosystems</p> <ul style="list-style-type: none"> ● B1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ B1.1, ● B2. Developing Skills of Investigations and Communication <ul style="list-style-type: none"> ○ B2.2, B2.5, ● B3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ B3.1, B3.3, B3.5 <p><u>Applied Stream</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8 & A1.10, ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>B. Biology: Sustainable Ecosystems</p>

	<ul style="list-style-type: none"> ● B1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ B1.1, B1.2, ● B2. Developing Skills of Investigations and Communication <ul style="list-style-type: none"> ○ B2.2, B2.3, B2.4 ● B3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ B3.2, B3.4 & B3.5
10	<p><u>Academic Stream</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p><u>Applied Stream</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.9, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1
11	<p><u>Biology</u></p> <p><u>Academic Stream (University Preparations)</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.7, A1.8, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>B. Diversity of Living Things</p> <ul style="list-style-type: none"> ● B1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ B1.1, B1.2, ● B2. Developing Skills of Investigation and Communication <ul style="list-style-type: none"> ○ B2.2, B2.4 ● B3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ B3.1, B3.5 <p>F. Plants: Anatomy, Growth, and Function</p> <ul style="list-style-type: none"> ● F1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ F1.1 ● F2. Developing Skills of Investigation and Communication <ul style="list-style-type: none"> ○ F2.2 ● F3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ F3.3 & F3.5 <p><u>Applied Stream (College Preparation)</u></p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>F. Plants in the Natural Environment</p>

	<ul style="list-style-type: none"> ● F1. Relative Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ F1.1, F1.2, ● F3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ F3.4 <p><u>Environmental Science</u></p> <p>Environmental Science (University/College Prep)</p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>B. Scientific Solutions to Contemporary Environmental Challenges</p> <ul style="list-style-type: none"> ● B1. Relating Science, to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ B1.1 ● B3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ B3.1, B3.5 <p>D. Sustainable Agriculture and Forestry</p> <ul style="list-style-type: none"> ● D2. Developing Skills of Investigation and Communications <ul style="list-style-type: none"> ○ D2.6 ● D3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ D3.2,D3.5, <p>Environmental Science (Workplace)</p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>B. Human Impact on the Environment</p> <ul style="list-style-type: none"> ● B1. Relating Science to technology, Society, and the Environment <ul style="list-style-type: none"> ○ B1.1 ● B3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ B3.6 <p>E. Natural Resource Science and Management</p> <ul style="list-style-type: none"> ● E1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ E1.1 ● E2. Developing Skills Of investigation and Communication <ul style="list-style-type: none"> ○ E2.2, E2.3, E2.4 ● E3. Understanding Basic Concepts <ul style="list-style-type: none"> ○ E3.2, E3.4, E3.5,E3.6
12	<p><u>Biology</u></p> <p>Academic Stream (University Prep)</p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.10 ● A2. Career Exploration

	<ul style="list-style-type: none"> ○ A2.1 F. Population Dynamics <ul style="list-style-type: none"> ● F1. Relating Science to Technology, Society, and the Environment <ul style="list-style-type: none"> ○ F1.1 <p>Science General</p> <p>Academic Stream (University/College Prep)</p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1 <p>Academic Stream (Workplace Prep)</p> <p>A. Scientific Investigation Skills and Career Exploration</p> <ul style="list-style-type: none"> ● A1. Scientific Investigation Skills <ul style="list-style-type: none"> ○ A1.1, A1.8, A1.10 ● A2. Career Exploration <ul style="list-style-type: none"> ○ A2.1
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References

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