

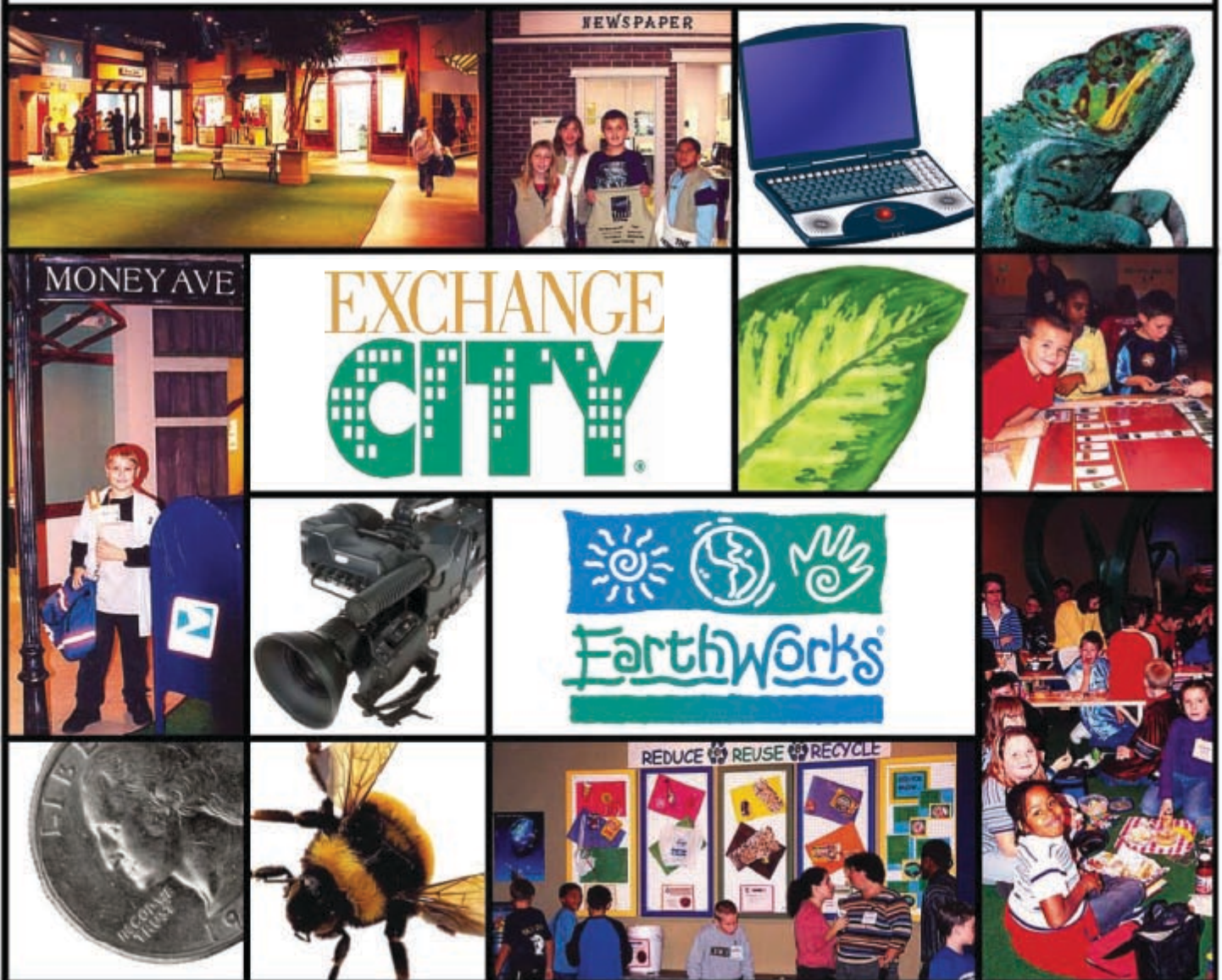


25 Granite Street
Portsmouth, NH 03801
Phone: (603) 433-2210

321 Harborside Blvd.
Providence, RI 02905
Phone: (401) 461-4224

20330 Superior Road
Taylor, MI 48180
Phone: (734) 287-8696

www.exchangecity.org





Middle School and High School
Standards and Frameworks-Based Curriculum
Aligned with the GLEs

Applies and Integrates

Math • Language Arts • Social Studies • Civics
Economics • Technology Applications

Gets ALL Students Excited About Learning

Exchange City

At Exchange City, middle and high school citizens collectively keep their very own city operating and thriving, from the mayor's office and the police department to the news media and the business community. The 40 hours of classroom preparation and follow-up, along with the full-day Exchange City simulation, teach and reinforce the democratic, economic and entrepreneurial concepts that are the cornerstones of the free enterprise system. Through Exchange City, teachers, students and parents experience mathematics, civics, social studies and literacy



through real-life problems, learning activities and instructional strategies. Students learn about different career options, personal finance skills and how their roles as consumers and producers are important to our economy. Exchange City's young citizens are excited by the chance to use the knowledge, skills and capacities they have learned in the classroom and home activities. During their full-day simulation visit students then become owners and operators of a multitude of businesses within a democratic government framework. It's an experience of a lifetime.



Elementary School and Middle School
Standards and Frameworks-Based Curriculum
Aligned with the GLEs

Applies and Integrates

Math • Science • Technology Applications
Language Arts

Gets Students Excited About Math and Science



EarthWorks

A natural event is coming to a crescendo in the wetlands. A flood has washed away surface soils and drastic erosion is occurring. Excited young scientists game plan solutions to save the ecosystem. Fortunately, these elementary school environmental superheros have been prepared for just such a scenario through six weeks of hands-on lessons during the EarthWorks program. After the student scientists prepare in the classroom, they immerse themselves "on-the-job"

exploring over 25 different science careers in their full-day simulation at EarthWorks. This dramatic simulated outdoor environment challenges the young scientists to work together to do exciting experiments, investigate live plants and animals, use state-of-the-art technologies and restore EarthWorks ecosystems to life-sustaining levels. Following their simulation experience, students engage in 10 hours of follow-up classroom lessons to complete the EarthWorks curriculum.



What Exchange City and EarthWorks Provide

Schools that enroll in Exchange City and EarthWorks receive the finest materials and support so that teachers, students and parents have a successful experience. The support includes the following:

■ **Curriculum:** Schools receive teacher's manuals, student



handbooks, and consumables for 40 hours of integrated curriculum focusing on science, math, economics, social studies, language arts and career exploration. Lessons are aligned with state standards, curriculum frameworks, No Child Left Behind standards and GLE's.

■ **Simulation:** Teachers, students and parent volunteers attend a full-day simulation in our 22,000 square foot Immersive Learning Center. At the Center, students apply their skills, knowledge and teamwork to solve problems as scientists, government officials and business leaders. The simulation includes all of the materials and technologies that students

require for their problem-solving, scientific inquiries and application of science in EarthWorks or the management of their own city government and economy in Exchange City.

■ **Teacher training:** Prior to starting the classroom preparation lessons, teachers attend Professional Development training addressing curriculum implementation, content priorities aligned with State Learning Standards. Continuous teacher support is provided throughout the program. Both Exchange City and EarthWorks teacher training components fulfill state professional development criteria.

■ **Parent/Volunteer training:** Parent volunteers attend training



in preparation for accompanying their children to the simulation. Schools view this parent involvement option as an exciting and popular family learning opportunity.



Achievement Outcomes (Mean Score Comparisons)



Exchange City

	Pre-Test	Post-Test	Percentage Gains
Total Population	47 th %	71 st %	51 percentage gain
Below Level Learners	34 th %	56 th %	65 percentage gain

EarthWorks

	Pre-Test	Post-Test	Percentage Gains
Total Population	37 th %	67 th %	81 percentage gain
Below Level Learners	25 th %	48 th %	92 percentage gain

Content Categories (Mean Achievement Gains)

Exchange City

	Pre-Test	Post-Test	Percentage Gains
Government	39 th %	61 st %	56 percentage gain
Personal Finance	33 rd %	65 th %	97 percentage gain
Business Economics: Applications	51 st %	67 th %	31 percentage gain
Workforce & Career Formats & Processes	45 th %	72 nd %	60 percentage gain
Economic Concepts & Theory	51 st %	73 rd %	43 percentage gain

EarthWorks

	Pre-Test	Post-Test	Percentage Gains
Roles and Methods of Scientists	29 th %	54 th %	86 percentage gain
Ecosystems and Environmental Conservation	29 th %	64 th %	120 percentage gain
Energy Cycle – Food Chains	37 th %	64 th %	73 percentage gain
Classification of Animals & Organisms	42 nd %	68 th %	62 percentage gain
Earth's Natural Cycles: Air, Water, Weather & Precipitation	37 th %	71 st %	92 percentage gain

Timeline of Exchange City® Student Experience



Four Weeks (20 Hours) of Economic Concepts

- Day 1: Wants & Needs
- Day 2: Supply & Demand
- Day 3: Scarcity & Abundance
- Day 4: Resources (Human, Natural & Capital)
- Day 5: Government (*Laws*)
- Day 6: Government (*Taxes*)
- Day 7: Goods & Services
- Day 8: Production
- Day 9: Division of Labor
- Day 10: Producers & Consumers
- Day 11: Opportunity Cost
- Day 12: Entrepreneurship
- Day 13: Bartering
- Day 14: Our Money System
- Day 15: Banking
- Day 16: Checking Accounts (*Overview, Deposit Tickets*)
- Day 17: Checking Accounts (*Check Register*)
- Day 18: Checking Accounts (*Check Writing*)
- Day 19: Checking Accounts (*Check Writing*)
- Day 20: Earners, Spenders & Savers (*The Benefits of Saving*)

Two Weeks (10 Hours) of Job Preparation

- Day 21: Law, Writing Laws
- Day 22: Deciding on Exchange City Laws
- Day 23: Employment Sections (*Applying for a Job, Resume Writing*)
- Day 24: Career Interest Inventory
- Day 25: Select Exchange City Jobs (*Apply, Interview*)
- Day 26: Personal Finance (*Paychecks, Debit Cards*)
- Day 27: Business Operations (*Shop Groups, Business Names, Employment Information Sheets*)
- Day 28: Loan Application, Utilities, Setting Prices
- Day 29: Advertising (*Tagline for Website, Business Sign Design, Radio and Newspaper Ads*)
- Day 30: Business Accounting & Inventory
- Day 31: **The Exchange City Experience—Full-Day (5 hours) Simulation**

Two Weeks (10 Hours) of Follow-up Concepts and Extension Activities

- Day 32: Reconciling Accounts
- Day 33: Investing
- Day 34: Stock Market Reports
- Day 35: Venture Capital
- Day 36: Business Expansion
- Day 37: Career Explorations (*ongoing*)
- Day 38: Career Connections (*ongoing*)
- Day 39: Reflection #1 – Observations from the City, Citizen Handbook
- Day 40: Reflection #2 – Exchange City Memories, Citizen Handbook
- Day 41: Reflection #3 – Thank You Notes, Letters and Feedback to EarthWorks Staff
- Day 42 & Beyond: Continue Integration in Subject Areas and Community Experiences



Clockwise from left:

Preparing for the radio program at the Broadcast Center

Exchange City in action

Gearing up for popcorn sales at the Snack Shop

Exchange City Meeting – the Mayor's presentation



Timeline of EarthWorks[®] Student Experience



Four Weeks (20 Hours) of Environmental Science Concepts

- Day 1: Team Building
- Day 2: How Do Scientists Work?
- Day 3: HabitatWorks (*Defining Habitats*)
- Day 4: Habitat Survey
- Day 5: EnergyWorks 1 (*Food Chains*)
- Day 6: Food Webs
- Day 7: EnergyWorks II (*Sources of Energy*)
- Day 8: Energy Audit
- Day 9: WaterWorks (*Water Cycle*)
- Day 10: Introduction to Variables
- Day 11: Recording/Analyzing Data
- Day 12: AirWorks (*Investigating Air*)
- Day 13: Air Pollution
- Day 14: SoilWorks (*Introduction to Soil*)
- Day 15: Soil Comparison
- Day 16: BioWorks (*Introduction to the Biosphere*)
- Day 17: Hypothesizing & Testing
- Day 18: Observing & Recording
- Day 19: Interpreting Graphs
- Day 20: Analyzing Results



Two Weeks (10 Hours) of Job Preparation

- Day 21: Habitat Preparation
- Day 22: Environmentally-Friendly Lunch (*Landfill, Recycling, Composting*)
- Day 23: The Work of Scientists (*Introduction to Science Careers*)
- Day 24: Web-Based Job Research / Application
- Day 25: EarthWorks Job Selection (*Interviews, Selection*)
- Day 26: Forming Science Teams (*Team Building*)
- Day 27: Forming Science Teams (*Team Communications*)
- Day 28: Web-Based Animal Research
- Day 29: Documentation of Research
- Day 30: Establishing Needs of Animals
- Day 31: **The EarthWorks Experience – Full-Day (5 hours) Simulation**

Two Weeks (10 Hours) of Follow-Up Concepts and Extension Activities

- Day 32: Web Connections
- Day 33: Revisiting Food Webs
- Day 34: Extended Research of Habitats
- Day 35: Evaluation of Habitats
- Day 36: Graphing and Charting Habitats
- Day 37: Presentation of Habitats
- Day 38: Reflection #1 – EarthWorks Memories
- Day 39: Prepare Scripts for Open House
- Day 40: Open House of Viable Habitats
- Day 41: Reflection #2 – Thank You Notes, Letters and Feedback to EarthWorks Staff
- Day 42 & Beyond: Continue Integration in Subject Areas and Community Experiences



Clockwise from top left:
Scientific investigation
Working with the animals
Scientists report their findings
Using flexcams and technology
for scientific inquiry



The Buzz about Exchange City



“I didn’t know that I would actually be able to do real life situations.”



“I learned I was responsible enough to run a business”



Children

“I learned that I can achieve my goal if I try my best.”

“I learned that I actually might be a good mayor in real life. I will use what I learned every day.”

“I learned that I work well with other people that I didn’t know. I would use what I learned every day to be organized and to use the computer better.”

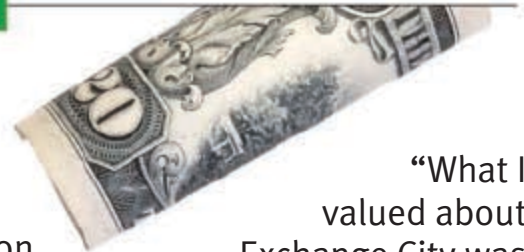
Teachers



“Meaningful learning was taking place in a fun, yet challenging environment.”

“You can’t put words on the valuable experience the students learned. I was impressed and proud to see my students succeeding.”

“What I valued about Exchange City was the real life simulation, economic concepts and students working as teams. It was a real life experience for our kids.”



“It was an unforgettable experience for the students – they loved it.”



Parents



“This is the coolest thing. I wish they had something like this (for me) a long time ago.”

“I don’t think you could change or add anything to Exchange City. I think it’s great just the way it is!!!.”

“I think the students now understand that it takes a lot of people to run a city; the whole experience was valuable.”

“This is a wonderful opportunity for our children to see how hard it is to get money, how fast it goes and also the responsibility they need to apply to make it in life.”



The Buzz about EarthWorks

“My day at EarthWorks was the best day of my life.”



“EarthWorks makes science fun!”

Children

“Earthworks is the best and I mean the very best.”



“I hope I can be in EarthWorks every year.”

“I think all students should have a chance to be EarthWorks scientists.”



Teachers



“We will come back to EarthWorks every year.”

“The whole EarthWorks experience was amazing! Thank you for this wonderful program.”



“I loved the hands-on learning, the excellent staff and the way my students responded to the EarthWorks curriculum!”

“Priceless! Through EarthWorks, these children were able to gain knowledge they otherwise would never experience!”



Parents



“I really enjoyed my experience and will highly recommend EarthWorks to other parents and teachers!”

“You have a wonderful program and I see nothing but success in your future. I think this was the best program my child has ever participated in.”

“These kids will never forget this day and will take the science that they learned with them forever.”



“EarthWorks is a great program. I feel lucky that my school is able to participate”





How Exchange City Works Hand-in-Hand with Teachers

- ▶ Exchange City is best suited for 5th through 9th Graders.
- ▶ Optional 2-week (12 hrs) or 7-week (35 hrs) in-school curriculum taught by the students' regular teachers in their regular classrooms.
- ▶ The one day or optional two day visit to Exchange City occurs as a field trip.
- ▶ Students become employees, producers, consumers and citizens.
- ▶ In addition to their teachers, parent volunteers accompany each class of students and participate and/or observe all activities.

Exchange City Annual Site Capacity – School Year Only
15,000 9-15 year-old Students, 1,000 Teachers,
and 10,000 Parents



How EarthWorks Works Hand-in-Hand with Teachers

- ▶ Designed for elementary and middle school students (3rd, 4th, 5th, and 6th Grade).
- ▶ 7-week (30 hrs) in-school curriculum taught by the students' regular teachers.
- ▶ The math and science filled curriculum is about challenges inherent in creating sustainable environment.
- ▶ The one day visit to EarthWorks occurs as a field trip in the 6th week of study.
- ▶ Every student has an opportunity to become a specific type of scientist.
- ▶ Students conduct experiments and investigations and work with wildlife.
- ▶ Students encounter and react to a surprise natural event.
- ▶ Scientists make presentations to other scientists.

Earthworks Annual Site Capacity – School Year Only
15,000 9-12 year-old Students, 1,000 Teachers,
and 10,000 Parents