SAINTS GLOBAL

LEADER GUIDE

EARTH SCIENCE

INTELLECTUAL CORE

Version 2026.1

Earth Science

PURPOSE & IDENTITY

SKILL BADGE PURPOSE

To develop informed environmental stewardship by applying earth science principles to real ecosystems, pollution challenges, conservation efforts, and human decision-making.

DEVELOPMENT CORE: INTELLECTUAL

This badge develops intellectual attributes through focused activities and reflection. Saints will grow in this area while building practical skills.

CORE FOCUSES

- Observation and analysis of natural ecosystems
- Human impact on air, water, land, and wildlife
- Conservation, restoration, and resource stewardship
- Scientific reasoning and evidence-based conclusions
- Career awareness in environmental and earth sciences

TIME COMMITMENT	RECOMMENDED AGE
4-6 weeks (suggested)	13+

SAFETY CONSIDERATIONS

FIELD SAFETY

Outdoor observations must be conducted with appropriate supervision, weather awareness, hydration, and protection from insects, plants, and terrain hazards.

ENVIRONMENTAL HEALTH

When studying pollution or hazardous materials, Saints must not directly handle unsafe substances and must follow local regulations.

EMERGENCY CONTACTS

Troopmaster: _____

Emergency: _____

THE DPAR METHOD

Saints Global uses the DPAR method for skill badge completion. As a leader, you should practice DPAR yourself when preparing to teach.

D

DISCOVER

Learn foundational knowledge and concepts. Research, study, and explore the topic.

YOUR ROLE AS LEADER:

- Immerse yourself in the material before teaching
- Study each requirement—understand what AND why
- Anticipate questions saints might ask

P

PLAN

Create a personal action plan with goals and timeline.

YOUR ROLE AS LEADER:

- Design your teaching approach for each requirement
- Gather materials and prepare discussion questions
- Consider how to adapt for different learning styles

A

ACT

Execute through hands-on practice with leader guidance.

YOUR ROLE AS LEADER:

- Shift from teacher to guide—step back
- Create safe space for practice and mistakes
- Model the skills yourself when helpful

R

REFLECT

Review what was learned and share experiences gained.

YOUR ROLE AS LEADER:

- Facilitate meaningful conversations
- Ask open-ended questions, listen more than speak
- Celebrate growth and help saints see their progress

STEP 1: DISCOVER

LEADER PREPARATION

- [ ] Review all DISCOVER requirements thoroughly
- [ ] Gather necessary resources and materials
- [ ] Prepare discussion questions and activities
- [ ] Identify potential challenges saints may face

STEP 1: DISCOVER — TEACHING GUIDE

Requirement 1a: Explain what environmental science means in your own words and how science can be used to understand, conserve, and improve the environment.

HOW TO TEACH

- Ask the Saint to connect science to real environmental decisions
- Discuss observation, data, and cause-and-effect
- Compare opinion-based vs evidence-based conclusions
- Reinforce stewardship as informed action

Completion: Saint clearly explains environmental science and its purpose.

Requirement 1b: Observe an approved ecosystem over two days, noting living, nonliving, and formerly living components and their interactions, including human impact.

HOW TO TEACH

- Encourage multisensory observation (sight, sound, smell)
- Use simple field notes or sketches
- Discuss food chains, native vs invasive species
- Identify at least one human-caused change

Completion: Saint presents clear observations and interactions.

STEP 2: PLAN

LEADER PREPARATION

- [ ] Review all PLAN requirements thoroughly
- [ ] Gather necessary resources and materials
- [ ] Prepare discussion questions and activities
- [ ] Identify potential challenges saints may face

STEP 2: PLAN — TEACHING GUIDE

Requirement 2a: Investigate a local water source, how it is treated and disposed, and review a community water quality report.

HOW TO TEACH

- Use official municipal or utility sources
- Discuss contaminants and treatment steps
- Explain why standards exist
- Connect clean water to public health

Completion: Saint accurately explains local water sourcing and quality.

Requirement 2b: Research air pollution impacts by either comparing transportation modes or studying the Clean Air Act and its outcomes.

HOW TO TEACH

- Use real examples tied to daily life
- Discuss tradeoffs and unintended effects
- Encourage balanced evaluation of benefits and costs
- Relate policy to measurable outcomes

Completion: Saint explains air pollution impacts with supporting examples.

STEP 3: ACT

LEADER PREPARATION

- [ ] Review all ACT requirements thoroughly
- [ ] Gather necessary resources and materials
- [ ] Prepare discussion questions and activities
- [ ] Identify potential challenges saints may face

STEP 3: ACT — TEACHING GUIDE

Requirement 3a: Research and present on a rare, threatened, or recovered species, including habitat, status, and conservation efforts.

HOW TO TEACH

- Encourage use of credible wildlife sources
- Practice concise explanation
- Discuss cause of decline or recovery
- Connect to local or national efforts

Completion: Saint completes report and presentation accurately.

Requirement 3b: Complete one hands-on conservation or pollution-prevention activity such as resource conservation, recycling documentation, hazardous waste identification, or pollination study.

HOW TO TEACH

- Favor actions with visible impact
- Require explanation of why it matters
- Connect actions to broader systems
- Encourage practical stewardship

Completion: Saint demonstrates and explains the selected activity.

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STEP 3: ACT — TEACHING GUIDE (CONTINUED)

Requirement 3c: Investigate two invasive species in your area, explaining origin, spread, impact, and control methods.

HOW TO TEACH

- Use local extension or conservation sources
- Compare invasive vs native roles
- Discuss prevention strategies
- Highlight long-term ecosystem effects

Completion: Saint accurately explains invasive species impacts.

Requirement 3d: Conduct an experiment to test for particulate matter (PM) contributing to air pollution and explain findings.

HOW TO TEACH

- Use safe, simple collection methods
- Explain sources of particulates
- Discuss health and environmental effects
- Emphasize experimental limitations

Completion: Saint completes experiment and explains results.

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STEP 3: ACT — TEACHING GUIDE (CONTINUED)

Requirement 3e: Evaluate the environmental impacts of a proposed construction project, including purpose, alternatives, and consequences.

HOW TO TEACH

- Introduce the concept of environmental impact assessment
- Require a no-action alternative
- Discuss tradeoffs and mitigation
- Focus on balanced judgment

Completion: Saint presents a clear impact evaluation.

STEP 4: REFLECT

LEADER PREPARATION

- [ ] Review all REFLECT requirements thoroughly
- [ ] Gather necessary resources and materials
- [ ] Prepare discussion questions and activities
- [ ] Identify potential challenges saints may face

STEP 4: REFLECT — TEACHING GUIDE

Requirement 4a: Identify three environmental or earth science careers and explain the training and preparation for one.

HOW TO TEACH

- Discuss field, laboratory, and policy roles
- Connect careers to badge activities
- Encourage realistic next steps
- Highlight service to society

Completion: Saint explains careers and preparation clearly.

RESOURCES & CONTACT

RECOMMENDED RESOURCES

- **Saints Global Resource Library** — Online materials and guides
- **DPAR Method Quick Reference** — Printable guide for leaders
- **Child and Youth Program Guidebook** — LDS Church Official Documentation for Children and Youth
- **For the Strength of Youth** — A Guide for Making Choices

SAINTS GLOBAL CONTACT INFORMATION

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Thank you for leading Saints Global!

Your dedication makes a difference in the lives of our children and youth.