Challenge	Recommendations
Chaos/Over-	• Use pre-visit lessons specifically related to the (museum) topics. <sup>1</sup>
stimulation	• Plan trips that introduce moderate novelty; use pre-trip orientation to reduce the novelty of new settings. <sup>2, 3</sup>
	• Prepare for novelty: cognitively, geographically, psychologically. <sup>4</sup>
Limited Time	• Students show better retention when the content is linked to the curriculum <sup>5, 6, 7</sup>
	• Use the museum's website to plan logistics and extend lessons in the classroom <sup>8</sup>
	• Incorporate science standards in lesson planning <sup>9</sup>
	• Limit the number of exhibits students visit to improve learning <sup>10</sup>
	• Allow time for small group exploration <sup>11</sup>
Teaching Tools (such as tasks, worksheets, or prompts)	• Consider students' input, interests, and abilities in planning your trip <sup>12, 13</sup>
	• Give students choice in exploring <sup>14</sup>
	• Some less structured time can be good <sup>15</sup>
	• If you use worksheets, emphasize concepts rather than a broad survey of the content, and preference questions that prompt students to interact with exhibits and allow some degree of choice in response <sup>16, 17</sup>
	• Encourage social interactions, (even) while using worksheets <sup>18, 19</sup>
Surprises	• Determine the trip's purpose first, then plan the setting <sup>20</sup>
	• If you choose a museum destination, consider how it supports your agenda <sup>21</sup>
	• Visit the field trip site ahead of time and coordinate with staff on safety, logistics, expectations and learning <sup>22, 23, 24</sup>
Chaperones	• Recognize and support multiple roles of chaperones and encourage chaperones to use new approaches to facilitating learning. <sup>25</sup>
	• Encourage chaperones to promote conversations among students (because most of students' talk in a museum is learning talk <sup>26</sup> ), and ask questions that require students to explore exhibits <sup>27</sup>
	• Encourage chaperones to interact with students in a family-like way in small groups <sup>28, 29</sup>
	• Consider providing chaperones with a list of questions and a bag of props they can use to focus students' attention and inquiry <sup>30</sup>
	• Model interest in exhibits <sup>31</sup>
	• Prepare chaperones with an understanding of students' current ideas, thinking, values, and learning needs <sup>32</sup>

## **Research-Based Recommendations for Teachers Leading Field Trips**<sup>\*</sup>

<sup>&</sup>lt;sup>\*</sup>Adapted from Rebar, B. M. & Enochs, L. G. (In press) Integrating Environmental Education Field Trip Pedagogy Into Science Teacher Preparation. In A. Bodzin, S. Weaver, & B. Klein (Eds.), *The Inclusion of Environmental Education in Science Teacher Education*. Springer Press.

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