From: Jimmy Dunn

To: Geography Subcommittee

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It was great to meet everyone and to get started on this crucial endeavor! Even though geography is not currently assessed in CSAP exams, it remains a very important perspective on local, regional, and world issues. It is obvious that diverse places in the world are tightly linked with a complex array of tension, cooperation, conflict, and changes.

I believe that what we all have to say has value because it helps us develop standards that consider the profile of our citizens. With that in mind, I offer some information that is thrown into the pot for your consideration and hope it stimulates a healthy exchange of ideas.

Last year, I went through the national standards in geography page by page. Here's the reference for the book that was put together by nearly 3,000 professional geographers:

Geography Education Standards Project. 1994. *Geography for Life: National Geography Standards 1994*. Washington D.C.: National Geographic Society, 1994.

The Colorado Model Content Standards came out a year later and mirrored the national standards, though it condensed 18 standards into 6 broader elements (called Essential Elements in the national standards).

So what did I find in the national book? Here is my interpretation (from J Dunn, Learning Geography Concepts Through the Grades, NCGE 2008):

Geographic Inventory

- These are features found on the surface of the earth: The "capes and bays" of the world.
- Includes human features such as countries, capitals, borders, cities, and landmarks (to name a few)
- Includes natural features: oceans, mountains, rivers, continents, islands, deserts, plateaus, seas, bays, and capes, of course!

Geographic Skills (a talent we develop to help answer geographic questions). Geographers employ skills that come from the most basic skills in science to answer questions (ask a question, collect data, organize the data, analyze, and answer). In my opinion, we need to go deeper into specific skills that are used more by geographers than others. For example:

- Map Reading and Construction (National Standards 1, 4, 8, 9, 11, and 18)
- Location Analysis (Standards 3 and 11)

- Place Comparisons (Standard 4)
- Problem Solving (Standard 18)

Important Note on Skills: In the most recent time period, a very valuable body of research is emerging about the way we think when it comes to geography. Phil and Carol Gersmehl have conducted a great deal of work in this area of "spatial thinking" that can really help Colorado establish itself as a leader in geography standards.

To condense their work into a list is helpful now, but if you want to read more on it, I've included the reference:

Here are skills that develop the human mind to think spatially:

1. Describing Conditions
2. Tracing Spatial Connections
3. Making a Spatial Comparison
4. Inferring a Spatial Aura
5. Delimiting a Region
6. Fitting a Place into a Spatial Hierarchy
7. Graphing a Spatial Transition
8. Identifying a Spatial Analog
9. Discerning Spatial Patterns
10. Assessing a Spatial Association

a. How does a place change over time?
b. How do things change in location through time?
c. How do things change in extent through time?

11. Designing and Using a Spatial Model
12. Mapping Spatial Exceptions

Source: **Gersmehl, P.J., and C.A. Gersmehl.** 2006. Wanted: A concise list of neurologically defensible and assessable spatial-thinking skills. *Research in Geographic Education* 8: 5-38.

Geographic Concepts and Theories (Geographic Concepts express ideas about things that are associated with the surface of the earth. Theories are bigger-picture explanations of how spatial variables interact) Examples of concepts and theories:

- map,
- climate,
- demographics,

- landscape, culture, dependence, region, site
- Theory: Central Place Theory from W. Christaller (1933)
- Theory: Demographic Transition Model

Geographic Processes: Action that results in a new arrangement or occupation of area. This is a very important part of geography because it explores the dynamic nature of the earth and supports its relevance in the modern world. Here a few processes that change the patterns we see on the surface:

  - Diffusion
  - Mass Wasting
  - Resource Management
  - Migration
  - Urbanization
  - Political Change

I put a simple website online if you want to see the entire list of skills, concepts, processes, and inventory, complete with page and standard references. See:
http://geography.unco.edu/department/faculty/DUNN/CDE%202009/CDE%202009Home.htm

Proposal: Possible New List of Standards by the end of Grade 12

The standards that we have are very strong—recognized by the broader community for their quality and comprehensiveness. They could be reframed in a simpler way that helps everyone understand that the world is full of issues that geographers can help to solve.

I know I can be long-winded, but I think that geography can be boiled down to:

How are places connected? What is like there? Where is everything?

The order is deliberate! It's more compelling to ask about connections—it's at the heart of geographic issues and dilemmas. The second question is important because it allows students to practice the skill of spatial comparison. The final question only matters if it is tied to a goal of understanding a problem (a curricular decision outside of our assignment).

Putting some flesh on the bones, I get:

1. Dynamic Surface: Students know the processes that change places as a result of human and natural connections.

    a. Skills: identification, tracing, measuring strength of influence, determining rates of change, transition graphing, constructing models, projection.
    b. Concepts: modification, links, connections, association, correlation, collaboration, conflict, territory, chokepoints.
    c. Processes: urbanization, diffusion, mass wasting, migration, resource management, political change, supranationalism.
2. Nature of places: (shortened from CO standard 2: physical and human characteristics of places). Students know a place's conditions and features of both natural and human origin.
    a. Skills: comparison of places, ranking of importance, classify, clustering into regions
    b. Concepts: boundary, transition, associations, spatial attributes, density, climate, biome.
3. Features of the Earth: Students know the location, size, and position of the world's *prominent* places including countries, cities, continents, oceans, lakes, and rivers.
    a. Skills: map construction, sketching, map reading, mental mapping
    b. Concepts: map, reference grids, scale, pattern, direction, enclosure, chokepoint, equator, pole, meridian, parallel, point, line, area, volume

I would be very interested to know what you think of this set. My own goal: keep it snappy, but don't miss the salient dimensions. We would include physical and human geography whenever it is relevant to the standard, not as an attempt to grab earth/life science curricular turf.

Sincerely,

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