**Map Types Exercise**

|  |  |  |
| --- | --- | --- |
| Type | Map | Uses / Characteristics  Levels of Distorted/Conformal |
| 1 | robinson |  |
| 2 |  |  |
| 3 | images |  |
| 4 | choropleth |  |
| 5 | http://go.owu.edu/~jbkrygie/krygier_html/geog_353/geog_353_lo/geog_353_lo08_gr/dots_la_hispanic.jpg |  |
| 6 |  |  |

* lesson created by S. Kotkin – modified by P. Gray

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| --- | --- | --- |
| **Type** | **Map** | **Uses / Characteristics** |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |

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**Types of Maps – Names and Uses - MAPS AND MAP PROJECTIONS**

Turn to pages A1-A9 in the back of your textbook, video below, the 10th ed. Rubenstein text (pages 478-482), *Goode’s Atlases* (pp. vii-xii), *Princeton Review* (87-90) and the web . Use these pages (front and back) to answer the map worksheet and the following questions.

1. What do the terms ***conformal*** and ***distorted*** mean with regard to maps 1-3, 9, and 10? How do the maps have elements of each? Explain. For maps 4-8 and 11, name only the characteristics of the map (not conformal or distorted).
2. What are the three different types of map scales (**use Video 1** below and the web to help answer)?
3. Describe and give an example of each of the three different types of map scales.
4. What are **ratio** and **scale type**?
5. What are the 4 general classes of map projections?
6. What is the major weakness of the *Mercator Projection*?
7. What are *dot symbols* on maps and what can they signify?
8. What is an *isoline*?
9. What are the strengths and weaknesses of the *Robinson Projection*?
10. What are *contour lines* signify on a map? How do they show slope on a map?
11. Explain the differences between ***small scale*** and ***large scale*** on a map (see page 89 in Princeton Review Book)?

**Use the Goode’s Atlas and Human Geography texts to complete the *Types of Maps* graphic organizer.**

**Videos you many find helpful:**

1. Map Projections – <http://www.youtube.com/watch?v=bBMs_LpwYpU>
2. Map types - <https://www.washingtonpost.com/news/worldviews/wp/2015/08/18/this-interactive-map-shows-how-wrong-other-maps-are/>
3. Purpose and Projection – Part 2 – <http://www.youtube.com/watch?v=EPbQQNrBIgo>
4. Map Projections – ESRI – 1:01 - <http://www.youtube.com/watch?v=2LcyMemJ3dE>
5. Map Projections – ESRI - <http://www.youtube.com/watch?v=e2jHvu1sKiI>
6. Never Trust a Map - https://www.youtube.com/watch?v=KUF\_Ckv8HbE&app=desktop

**KEY – Map Types**

**MAP TYPES – 23 + 11 + 26 = 60 points**

**Map Names/Types:**

Dot Distribution Map / Density Map, Proportional Symbol Map, Robinson Projection Map, Sinusoidal Projection Map, Cartogram, Goode’s Interrupted, Homolosine Map, Mercator (or Miller) Map, Mollweide Projection Map, Flow Line Maps, Choropleth, Isoline Map

**1-11 = 2 points each or 23 points**

**1-11 – Map ID = 1 point each or 11 points, and**

**1-12 – characteristics = 1 point each or 11 points (1-3 and 5-12), 4 worth 4 points = 26 points total**

1. Robinson
2. Mercator or Miller
3. Goode’s Interrupted Homolosine Map
4. Choropleth
5. Dot Distribution/Density Map
6. Proportional Symbol Map
7. Cartogram
8. Isoline
9. Sinusoidal Projection Map
10. Mollweide
11. Flow Line Map

KEY

1. What do the terms ***conformal*** and ***distorted*** mean with regard to maps 1-3,7,9,10, and 12? How do the maps have elements of each? Explain. For maps 4,5,6,8 and 11, name only the characteristics of the map (not conformal or distorted). 2 points
2. What are the three different types of map scales (use this video - http://www.youtube.com/watch?v=bBMs\_LpwYpU and the Rubenstein book and the web to help answer)? 3 points

Word Statement

Graphic Scale

Representative Fraction

1. Describe what each one means and give an example? 3 points

WS – comparing x units to y units – One inch equals ten miles

GS – bar graph – don’t need to visualize inches to miles – direct comparison of distances and features

RF – defines the ratios of things on the map to things on earth – 1:660,000

1. What are **ratio** and **scale type**? What *area* do they *cover* with what *detail* - and what *purpose* do they have? Explain all with examples (see page 89 in *Princeton Review*).

**Ratio** is fraction expressed of the map scale.

**Scale Types** are: large and small

**Area covered**: Small and large

**Detail**: high and low

**Purpose**: city – show small area with lots of detail and state/province – show large area with little detail

1. What are the 4 general classes of map projections? 4 points

Cone or Conic –

Cylindar

Planar or Azimuthal

Oval

1. What is the major weakness of the *Mercator Projection*?
2. What are *dot symbols* on maps and what can they signify?
3. What is an *isoline*?
4. What are the strengths and weaknesses of the *Robinson Projection*?
5. What are *contour lines* signify on a map? How do they show slope on a map?
6. Explain the differences between *smaller scale* and *larger scale* (use pg 89 Princeton Review)?

**Large and Small Map Scale – See page 89 chart in Princeton Review**

A map which depicts a **small territory** is referred to as a **large scale map**. This is because the area of land being represented by the map has been scaled down less, or in other words, the scale is larger. A large scale map only shows a small area, but it shows it in great detail.

A map depicting **a large area**, such as an entire country is considered **a small scale map**. In order to show the entire country the map must be scaled down until it is much smaller. A small scale map shows more territory, but it is less detailed.

<http://www.kidsgeo.com/geography-for-kids/0029-large-and-small-scale-maps.php>

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| --- | --- | --- |
| Type | Map | Uses / Characteristics  Levels of Distorted/Conformal |
| 1  Robinson | robinson | Areas near the poles appear flatter than reality. Land is fairly accurate in size and shape, especially on the eastern and western edges. |
| 2  Mercator |  | Greatly exaggerates the high latitudes countries. Direction is accurate on the map. Images near the poles appear much bigger than reality. Shapes are accurate sizes are not. |
| 3  Goode’s Interrupted or | images | Portray areas in the earth’s surface as their true proportion. Used for compare and contrast of land area regarding size. |
| 4  Choropleth | choropleth | Shows geographical information and intensity level over an area using pattern or color for each unit of representation. |
| 5  Dot Distribution or Density Map | http://go.owu.edu/~jbkrygie/krygier_html/geog_353/geog_353_lo/geog_353_lo08_gr/dots_la_hispanic.jpg | Uses dots to show the distribution of particular criteria over an area. Dots do not show actual location of the criteria but the density of the criteria in that region. |
| 6  Proportional Symbol |  | Shows the number of things in a particular area using the symbol scaled to represent the data. |

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| **Type** | **Map** | **Uses / Characteristics** |
| 7  Cartogram |  | Size of the units is proportional to the data represented. Used to represent statistics such as political turnout or population density. |
| 8  Isopleth or Isarithmic Map |  | This type of map is ideal for showing gradual change over space. Temperature is a phenomenon that should be mapped using isopleth. Relief maps should always be in isopleth form for this reason. |
| 9  Sinusoidal |  | Excellent for reference |
| 10  Mollweide |  | Excellent for reference |
| 11  Flow Line Map |  | Lines show direction of movement of phenomena. Thickness of lines show amount of what is being measured |
|  |  |  |

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