Urban EcoLab Curriculum

http://www.urbanecolabcurriculum.com

Urban Heat Islands

Module 2, Lesson 4

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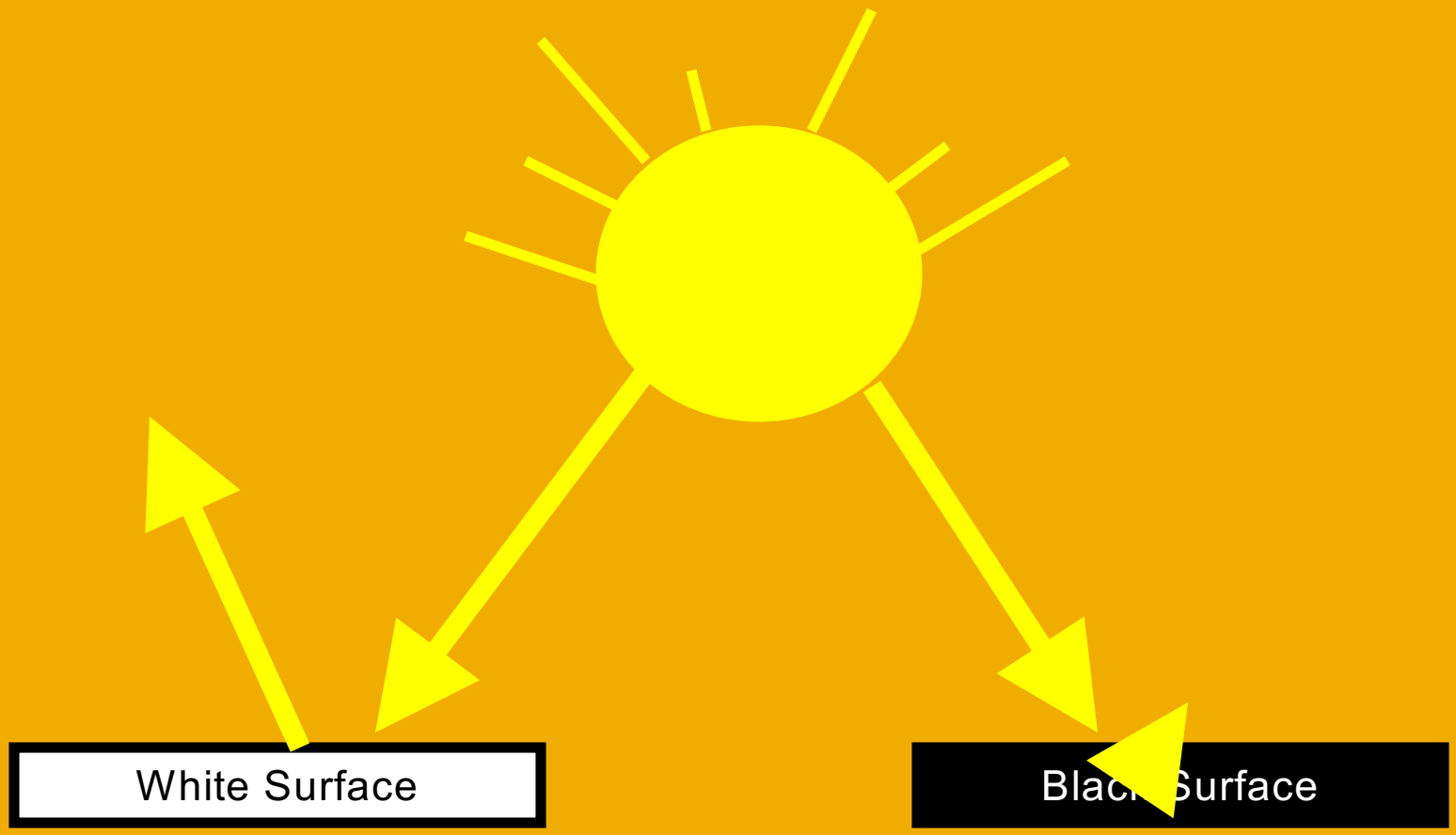
Reflectivity



White surfaces reflect almost all of the incoming light

Black surfaces reflect almost none of the incoming light

Reflectivity

Albedo- the amount of sunlight reflected ranging from 0-1

Light surfaces have a high Albedo
(near 1 or 100% light reflected)

Dark surfaces have a low Albedo
(near 0 or 0% light reflected)

If light is not reflected it is absorbed by the surface which produces heat

Albedo

- **Think about the color of the surfaces to the right…**
- **Would these have high, medium, or low albedos?**

Surface♪	Albedo♪
Asphalt♪	0.04
Forest♪	0.09
Bare Soil♪	0.17
Green Grass♪	0.25
Sand♪	0.4
Concrete♪	0.6
Snow♪	0.9

Albedo and Heat Islands

- Typically cities have a lot of dark surfaces and low albedos

- The absorption of sunlight by dark surfaces contributes to the formation of a heat island

Aerial view of Boston

Impacts the weather

- Warm air rising from a city can cause precipitation downwind of the city
- The warm air and precipitation can affect winds for hundreds of miles