

4th International Conference on Imagination and Education:

Opening Doors to Imagination; Vancouver, BC, 12-15 July 2006

(text: 8 pp. in Proceedings <http://www.ierg.net/confs/viewpaper.php?id=126&cf=1>)

"Natural Horizons" in Science Education

Nadine Lefort, BScCS, MA-EEC (in progress)

Cheryl Bartlett, PhD

Murdena Marshall, MEd





CAPE BRETON
UNIVERSITY

TOQWA'TU'KL KJIJITAQNN
INTEGRATIVE SCIENCE

MI'KMA'KI

map image: Native Council of Nova Scotia
Mi'kmaq Language Program
Artist: Michael J. Martin



Artist Basma Kavanagh

Toqwa'tu'kl Kjjitaqnn Integrative Science

Indigenous

our knowledges
our world views

Western

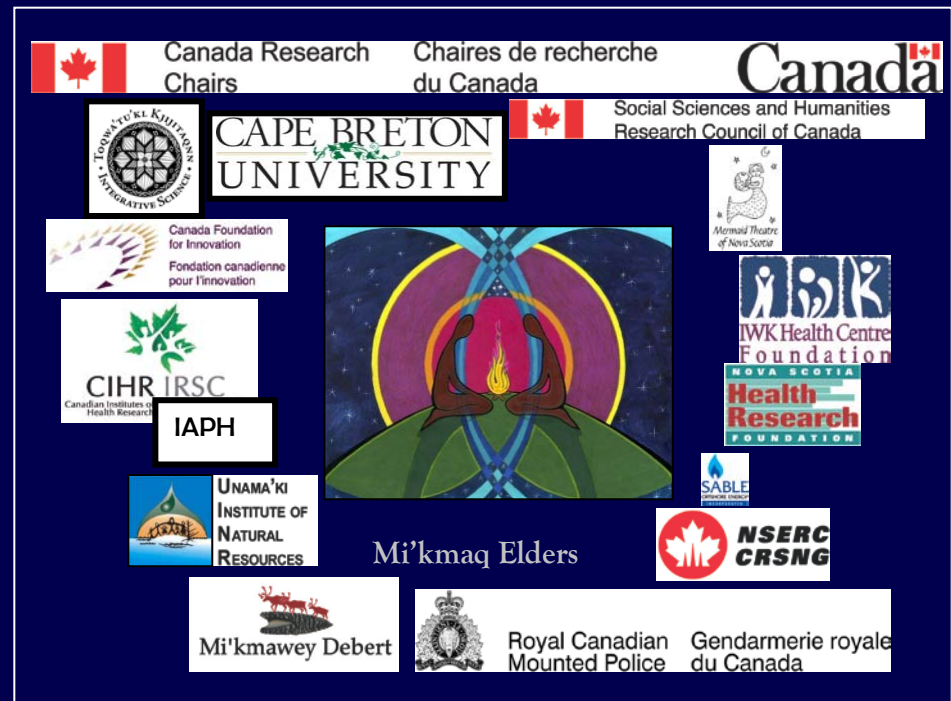
“bringing

our stories

together”

our patterns

integrative framework



both Indigenous and Western, plus:

- our common ground
- our differences
- our journey ... forward & together
- role of me and you in “the knowing”

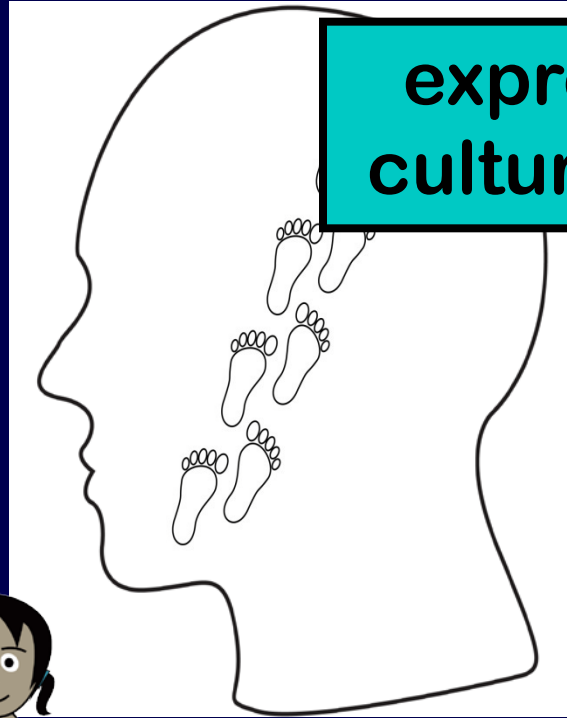
pattern

CONCEPTUAL FRAMEWORK

natural

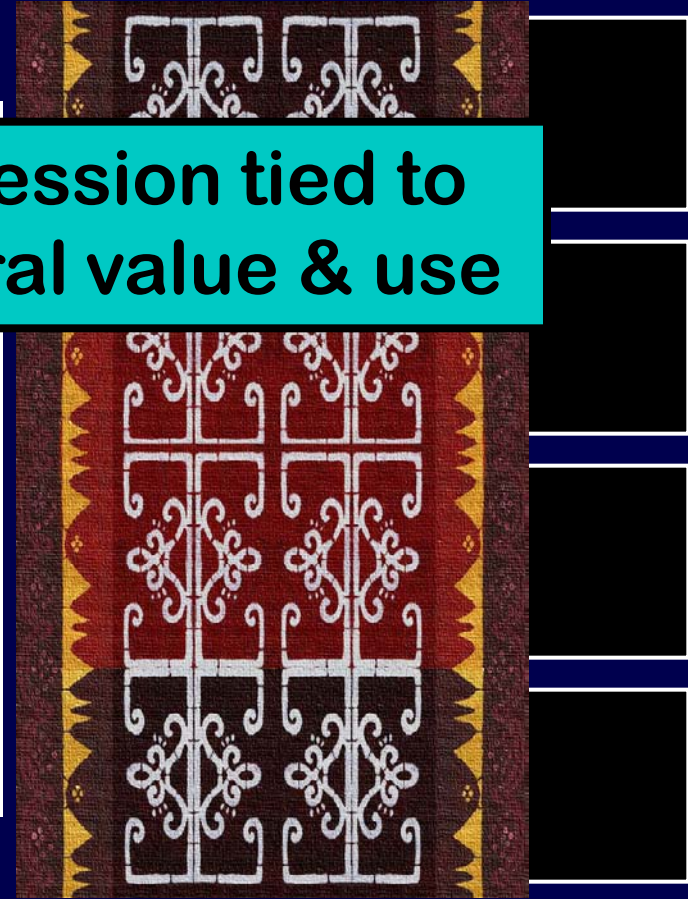


ideal



expression tied to cultural value & use

abstract



recognize
pattern



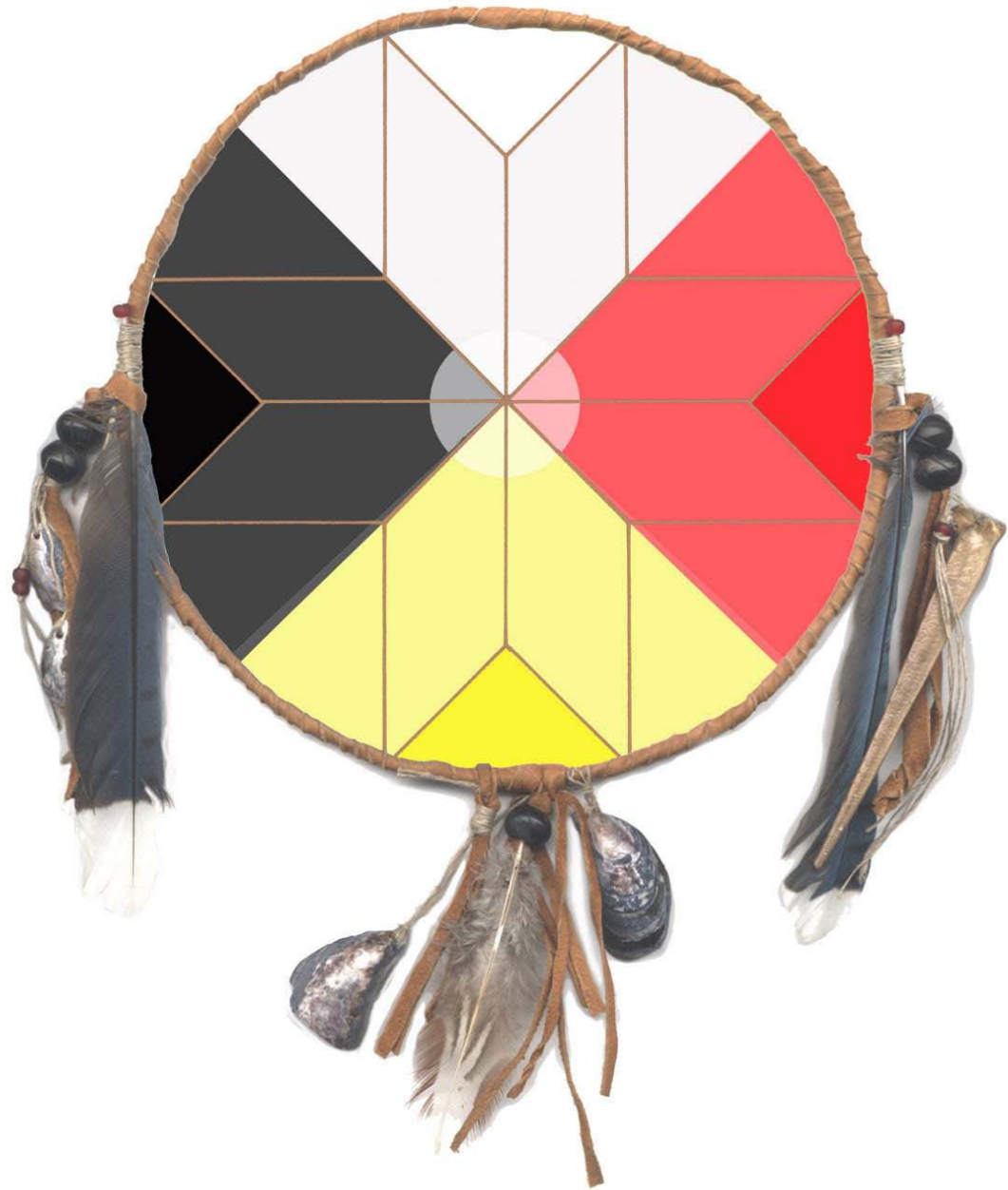
transform
pattern

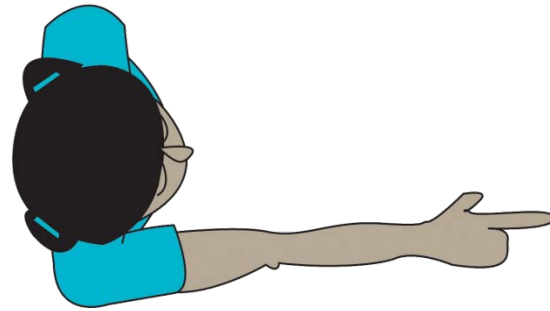
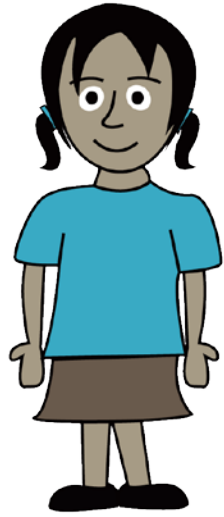
express
pattern

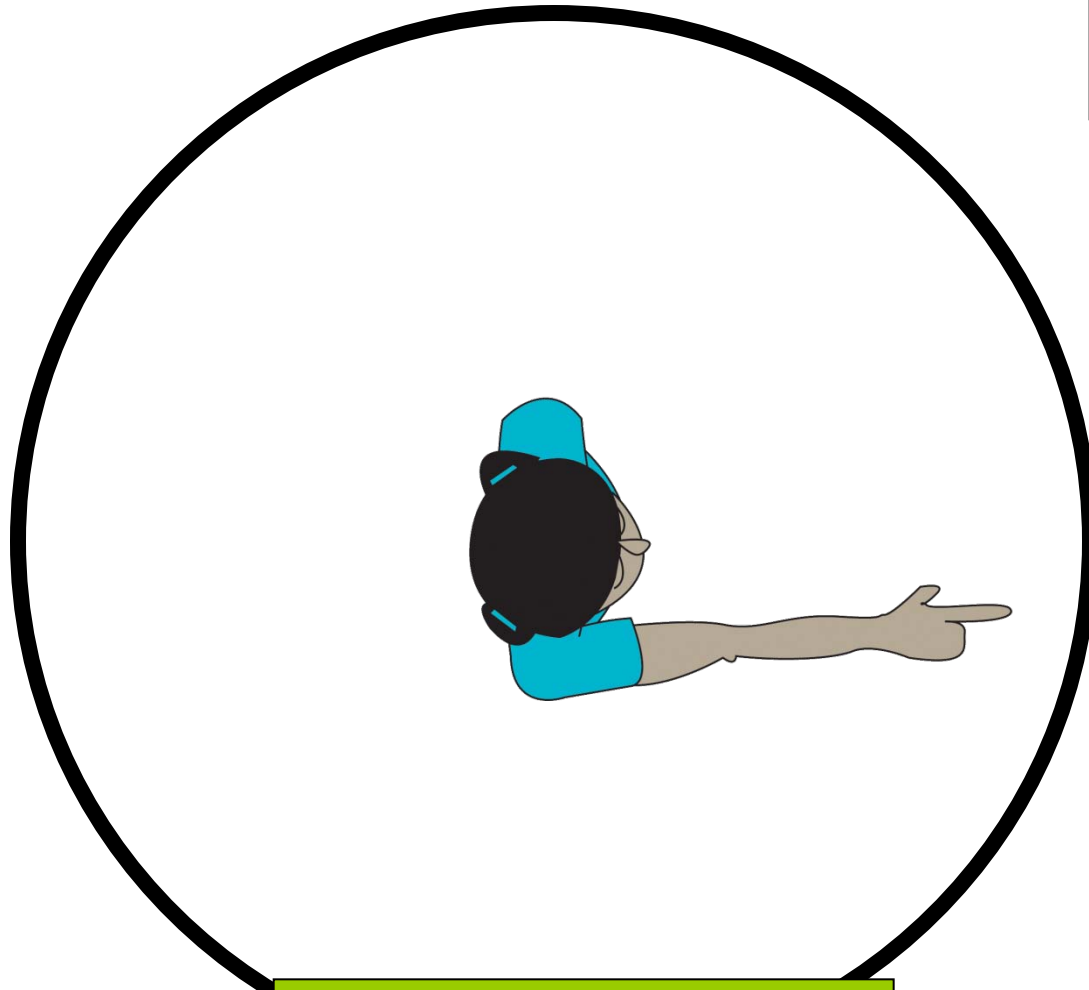


explore pattern ... using example of the rising sun









PLACE



North



West

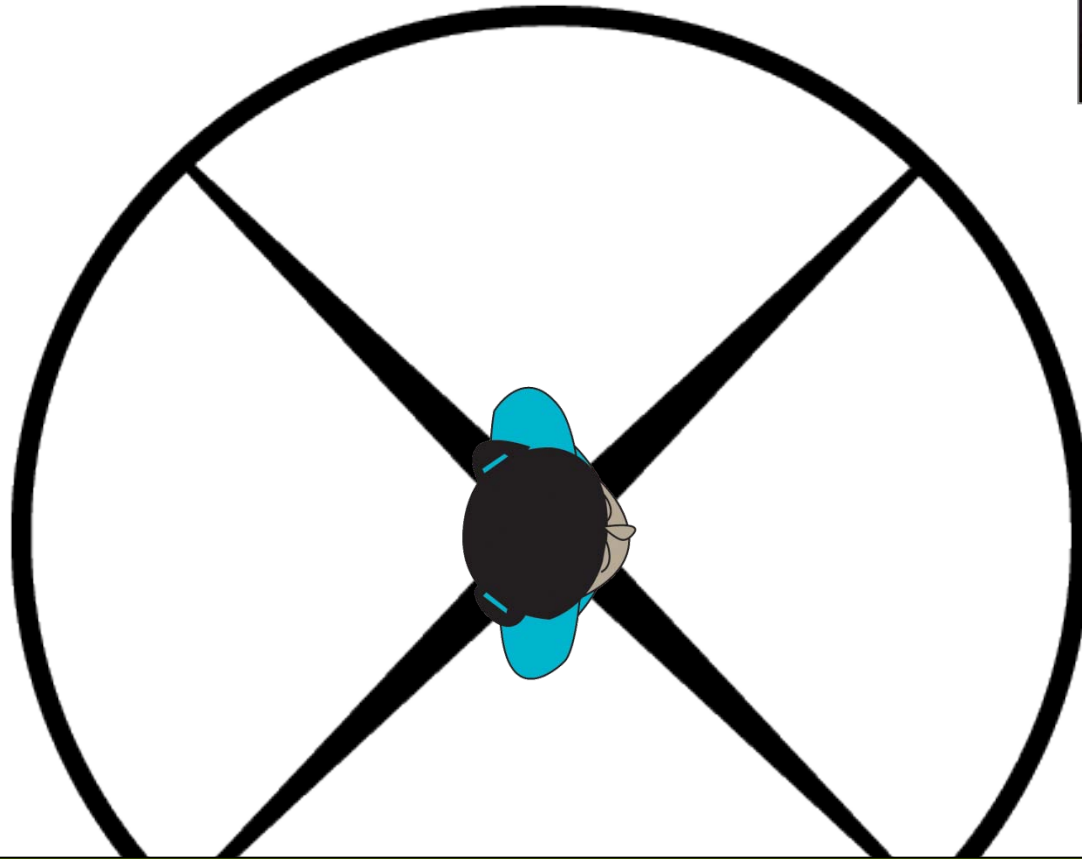


East

relating to place

South





**relating to place ...
over cyclical time**

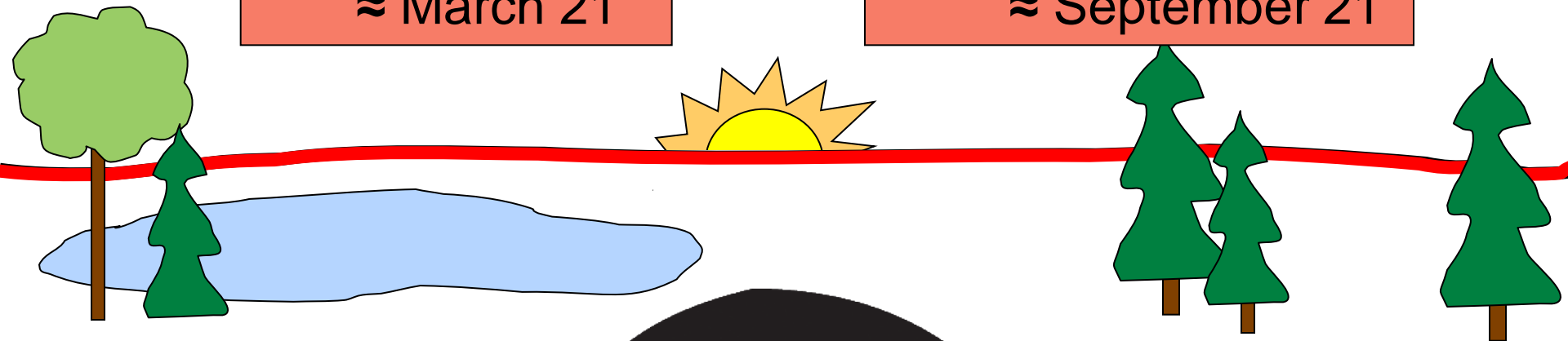


explore pattern of rising Sun

E

Spring Equinox
≈ March 21

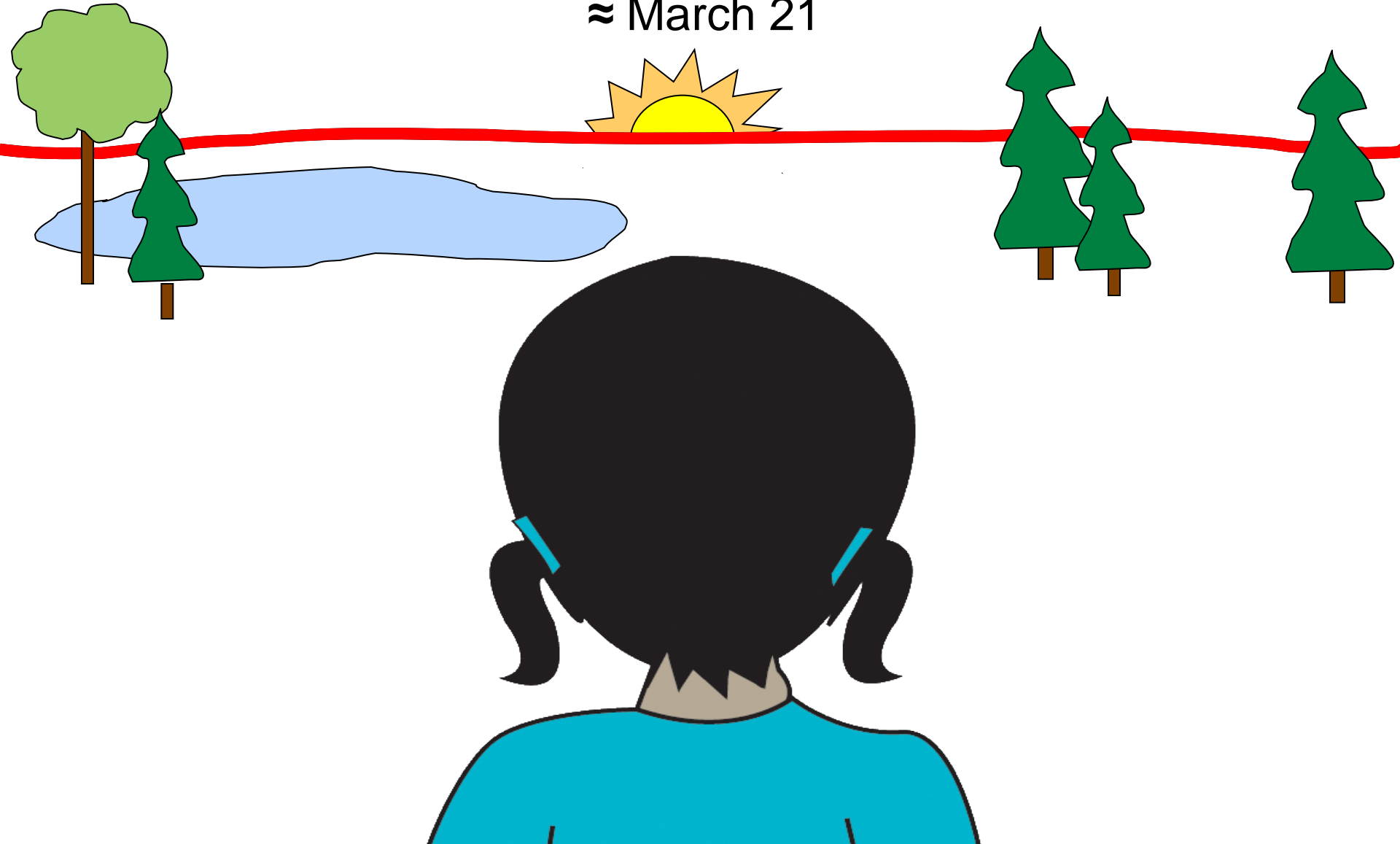
Fall Equinox
≈ September 21



Eastern
horizon

E

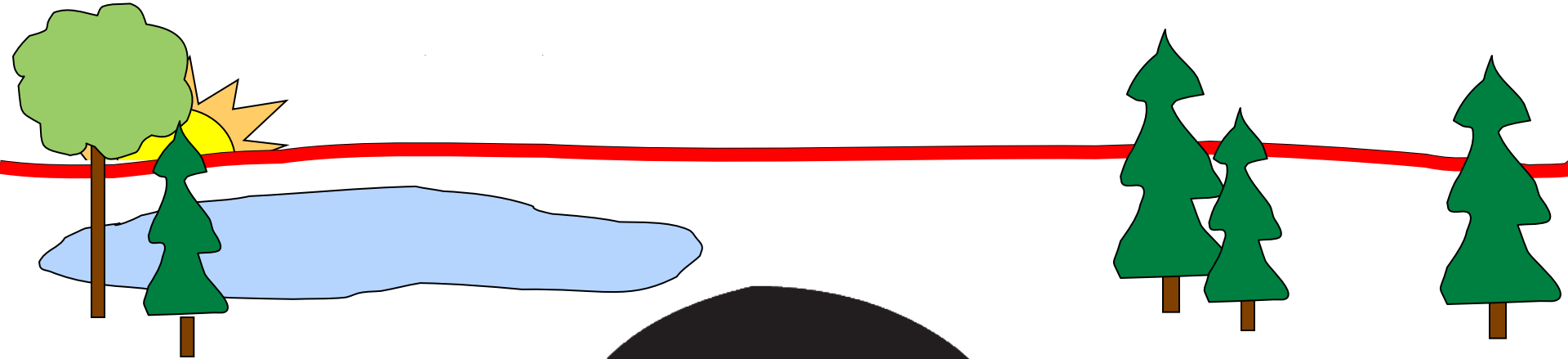
Spring Equinox
≈ March 21



N
↓

Summer Solstice
≈ June 21

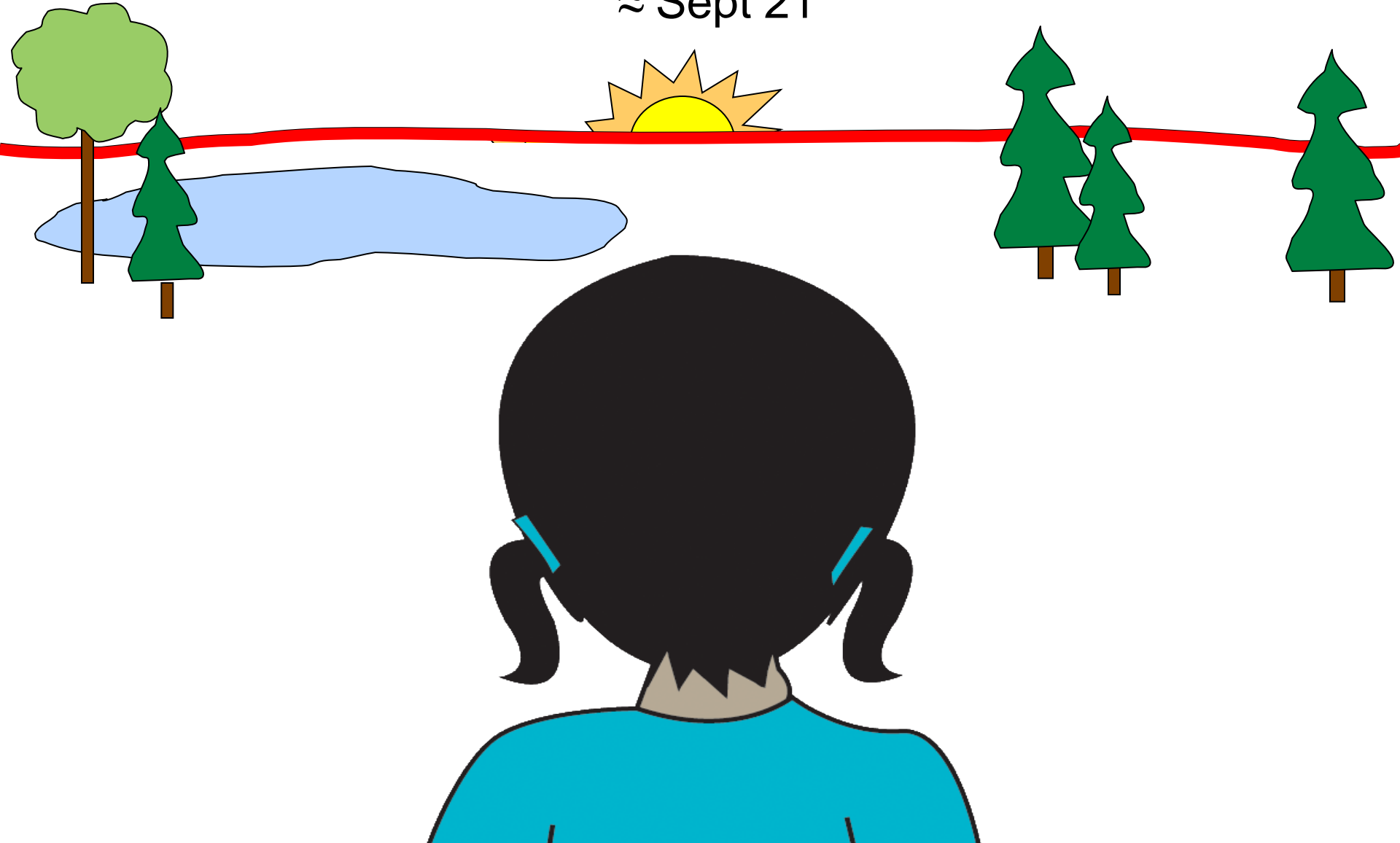
E



E

Fall Equinox
≈ Sept 21

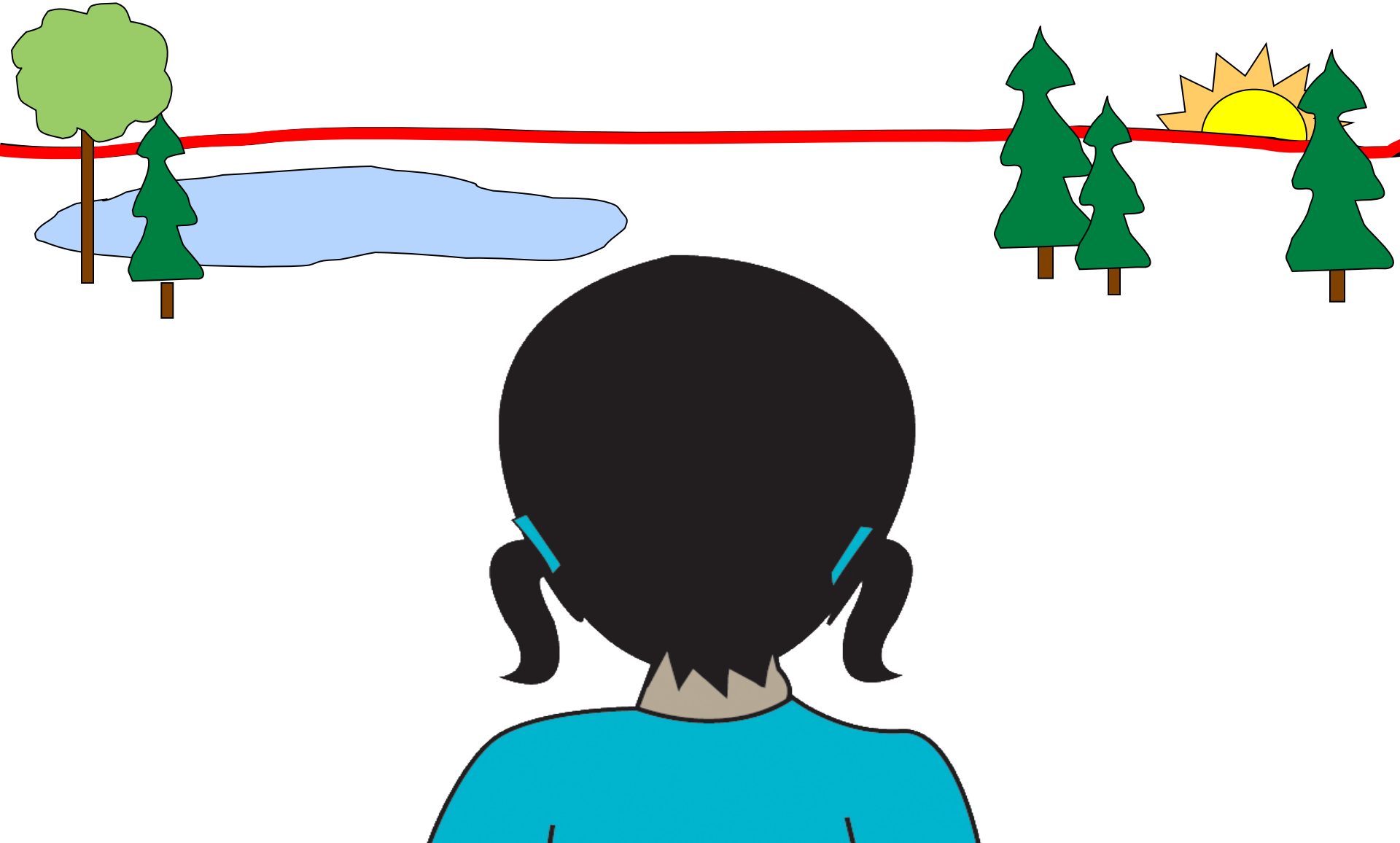
S
↓



E

Winter Solstice
≈ December 21

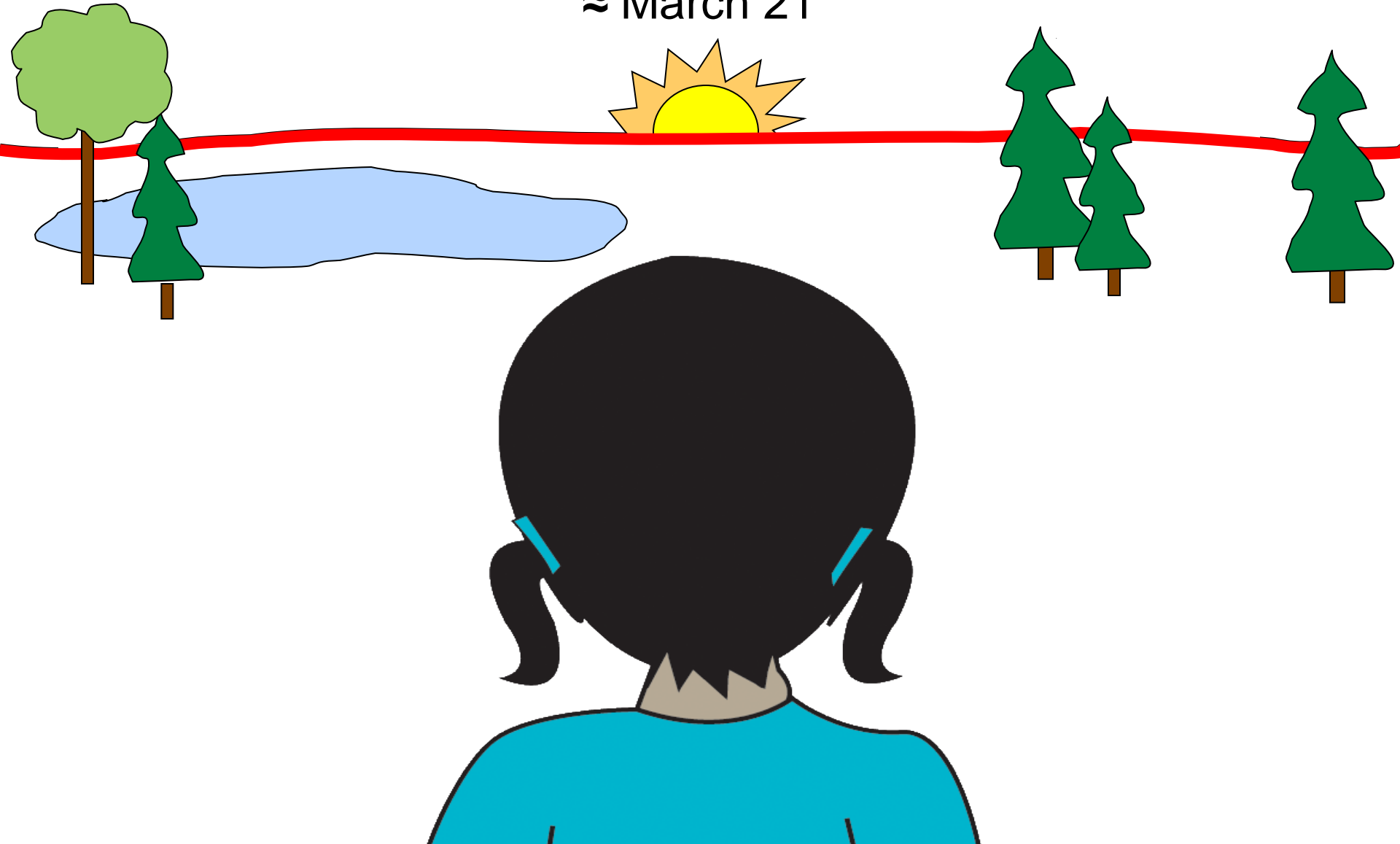
S
↓



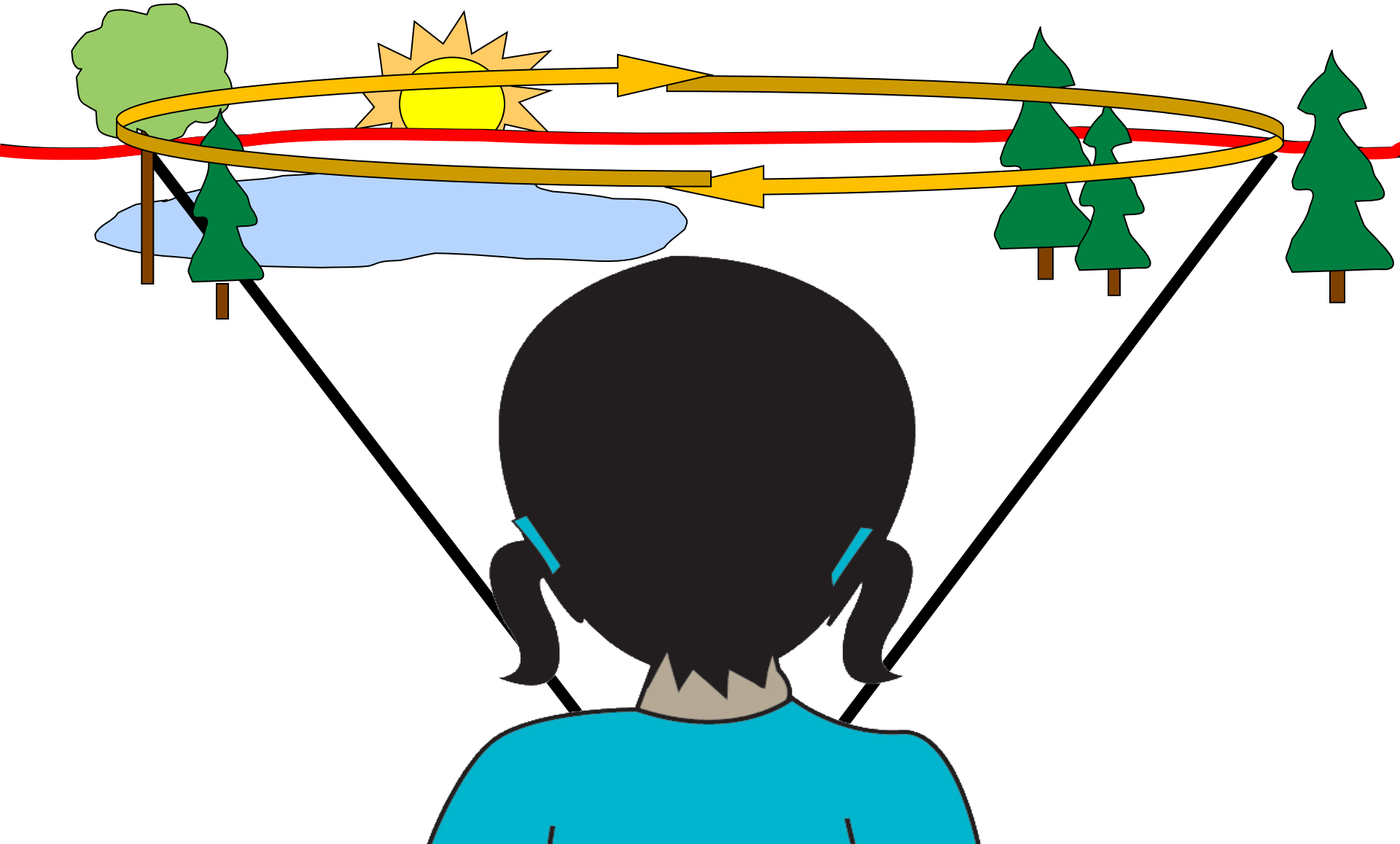
N
↓

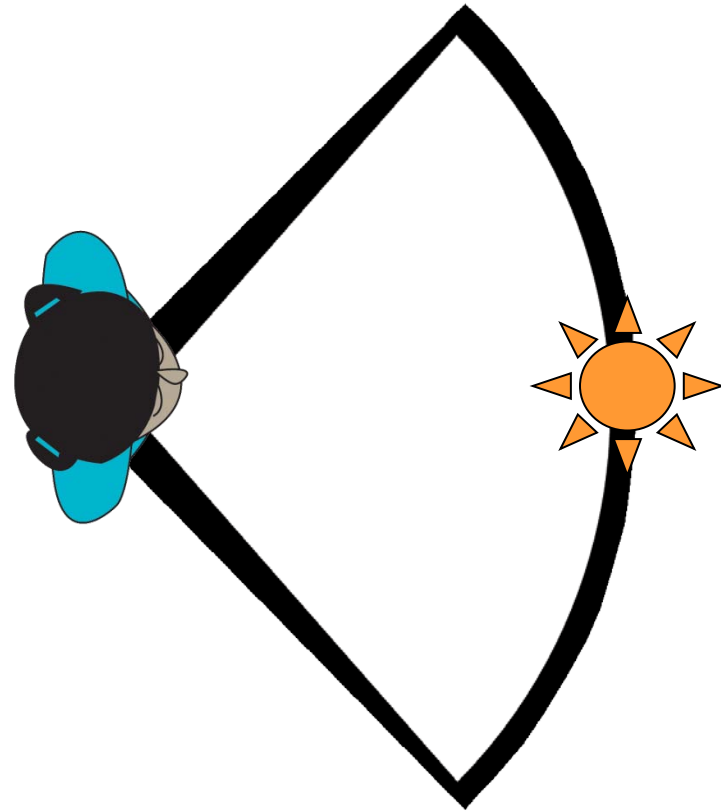
E

Spring Equinox
≈ March 21



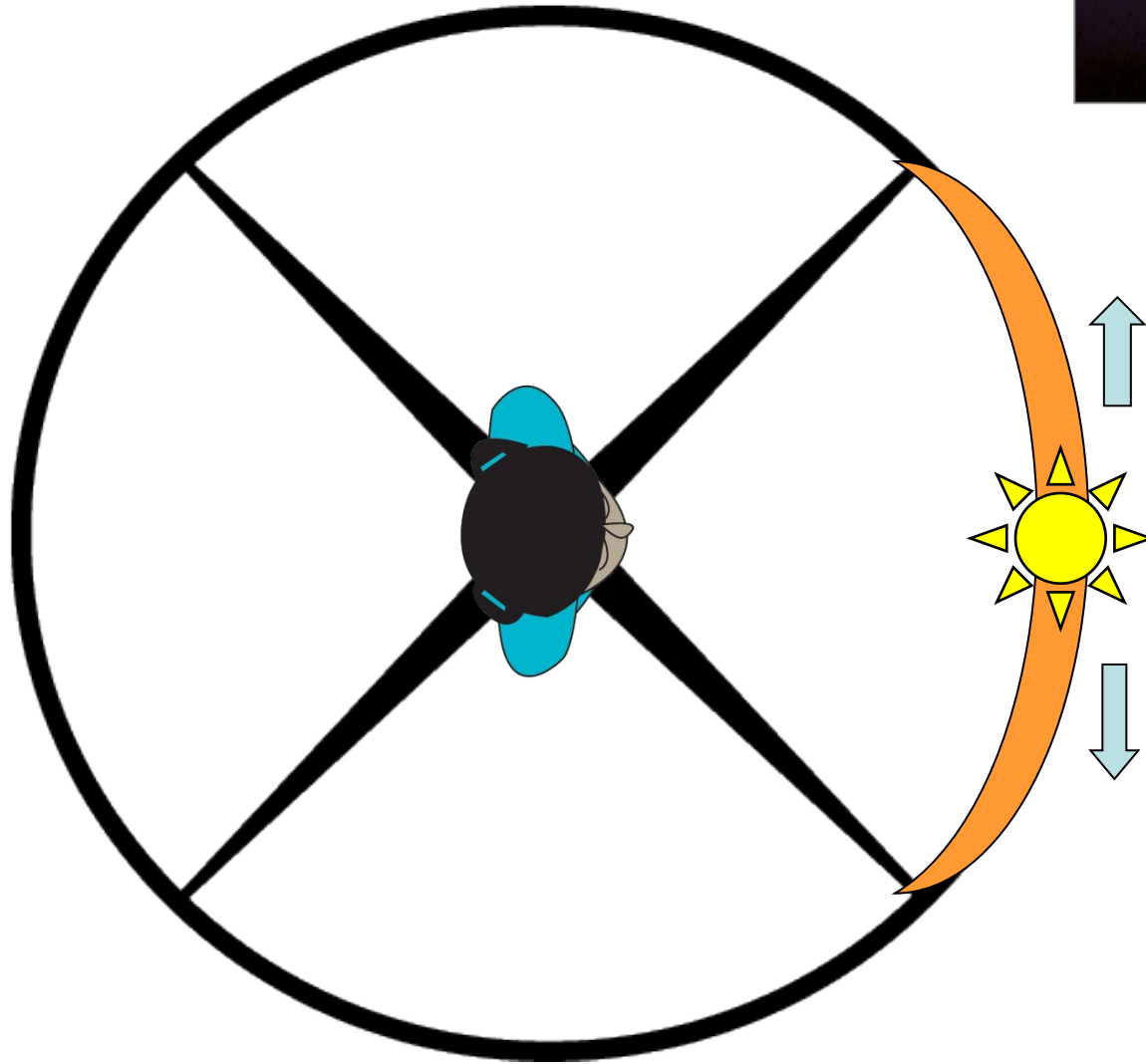
pattern of rising Sun over one full year





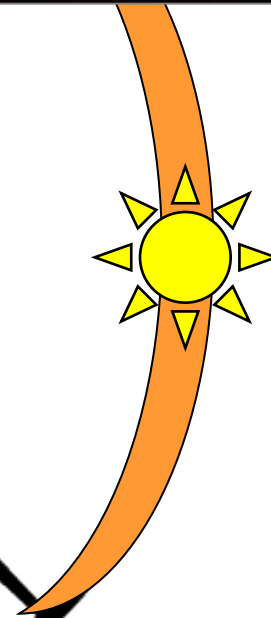
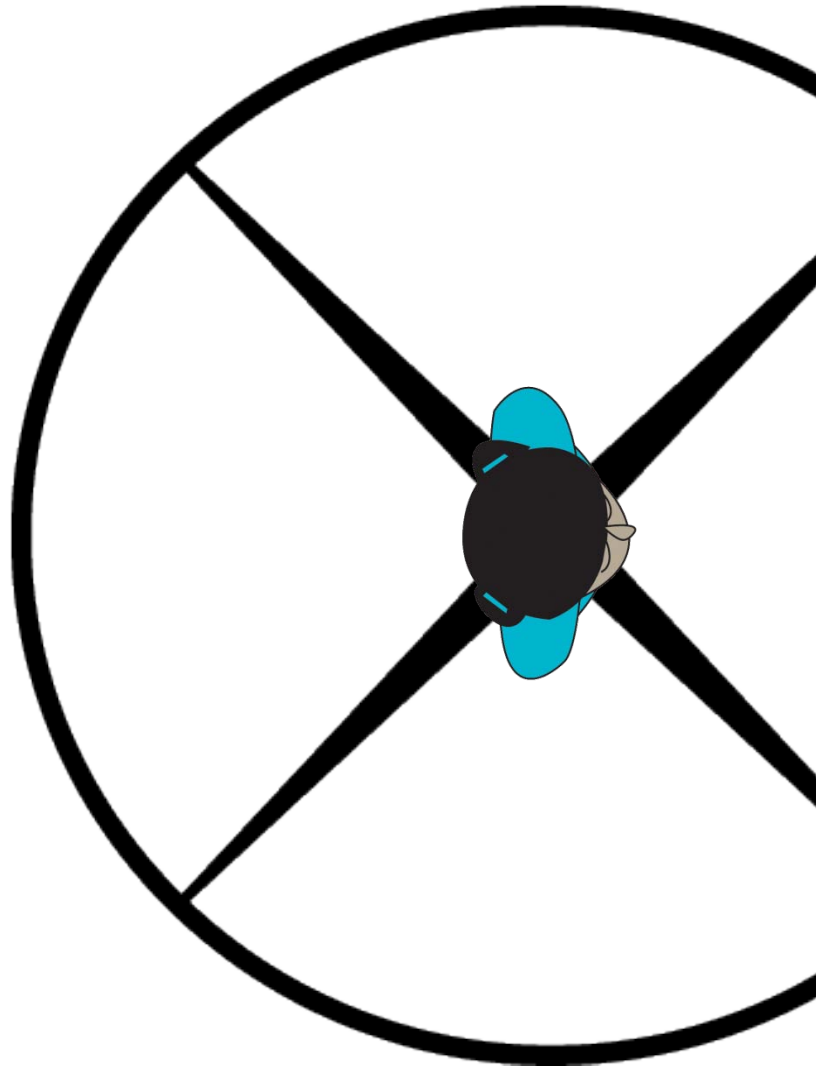
East





East



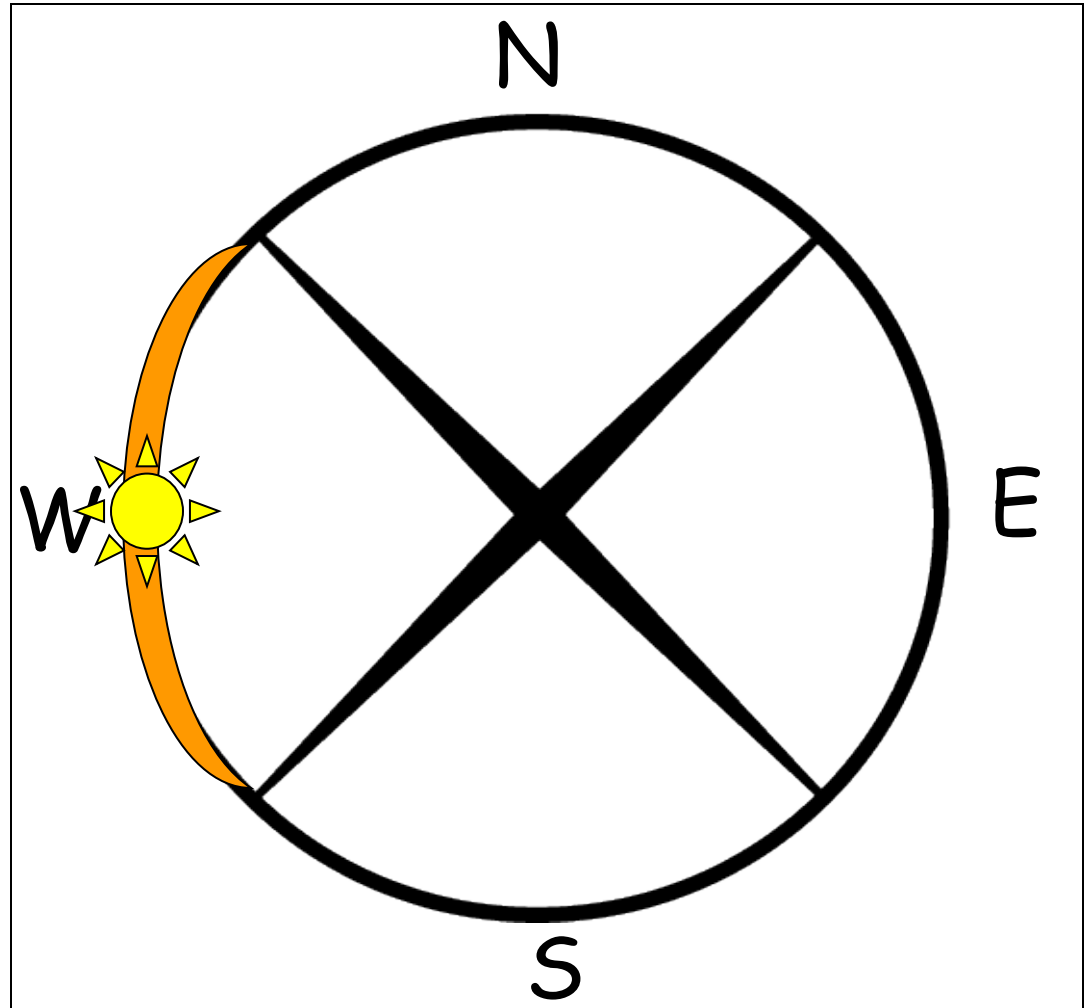
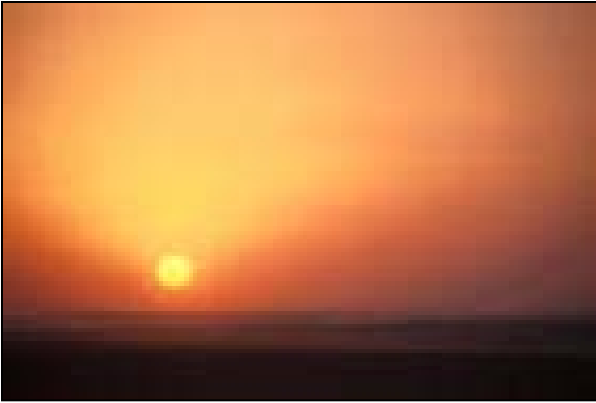


East

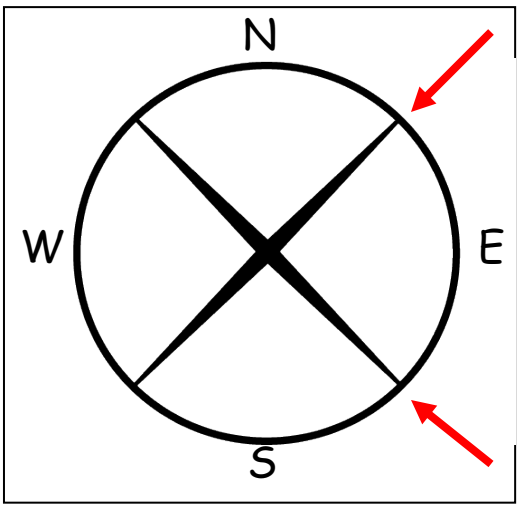
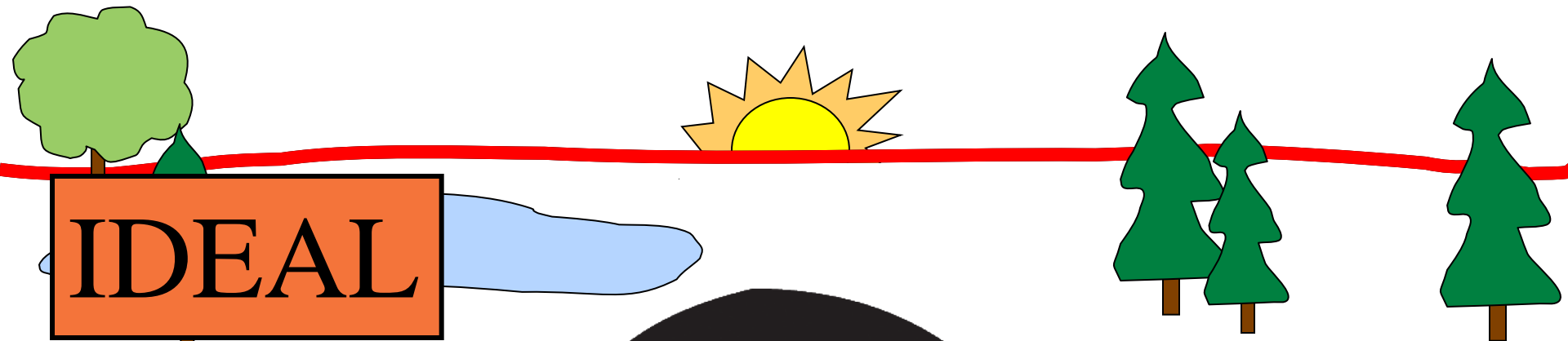


to explore pattern of setting Sun: "flip" pattern of rising Sun

Western horizon

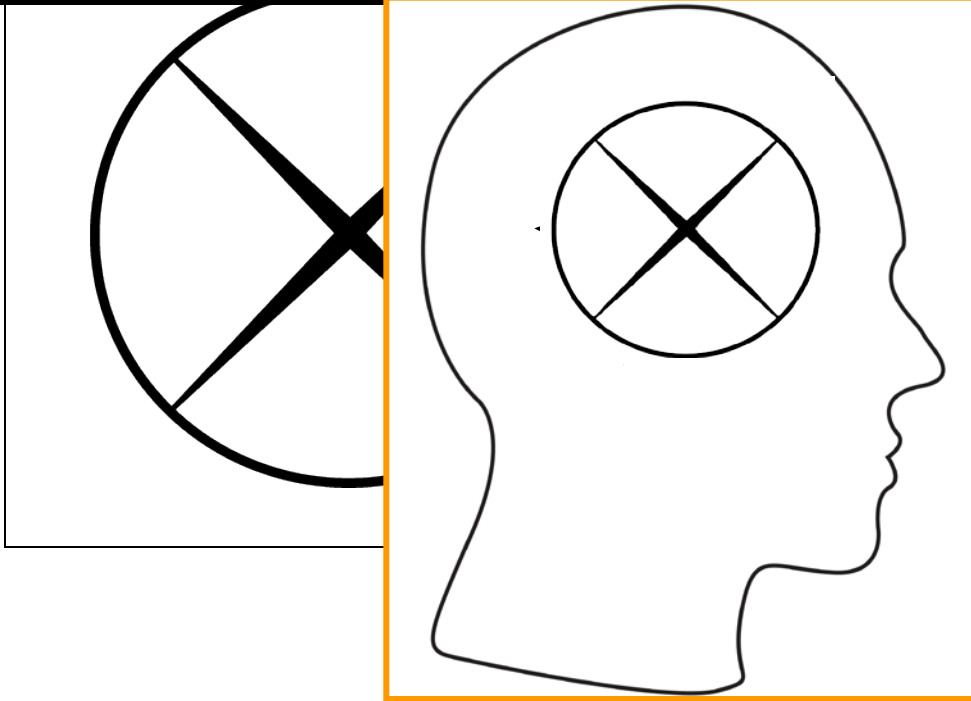


again, pattern of rising Sun E

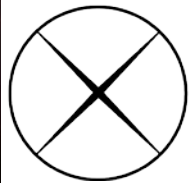


pattern of rising sun creates a different "X" at different latitudes

IDEAL



Cape Breton 46°N



arctic



creative role of observer
in the knowing



near equator



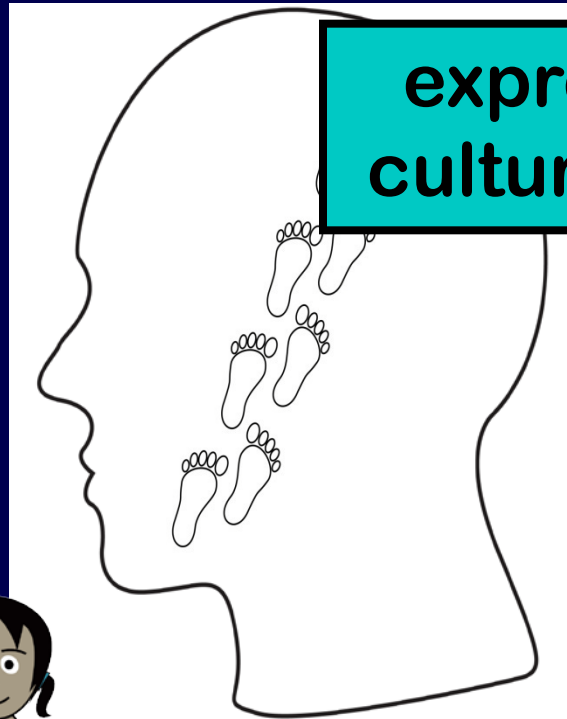
pattern

CONCEPTUAL FRAMEWORK

outer

inner

outer



expression tied to
cultural value & use



recognize
pattern



transform
pattern

express
pattern

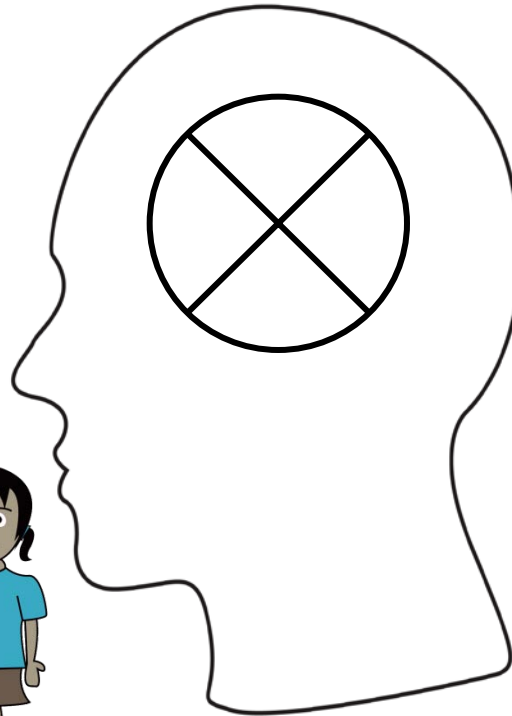


Medicine Wheel ... reflecting natural pattern:

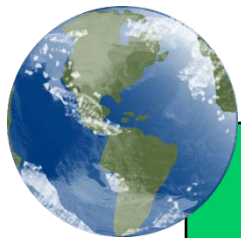
natural



ideal



abstract



PATTERN

expression tied to
cultural value & use

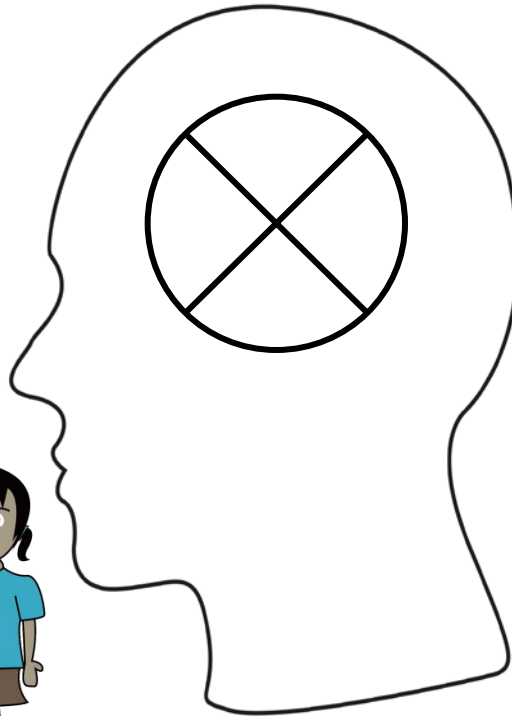


Medicine Wheel ... reflecting natural pattern:

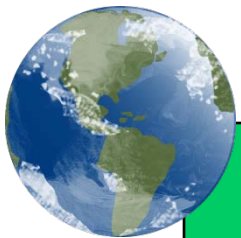
natural



ideal



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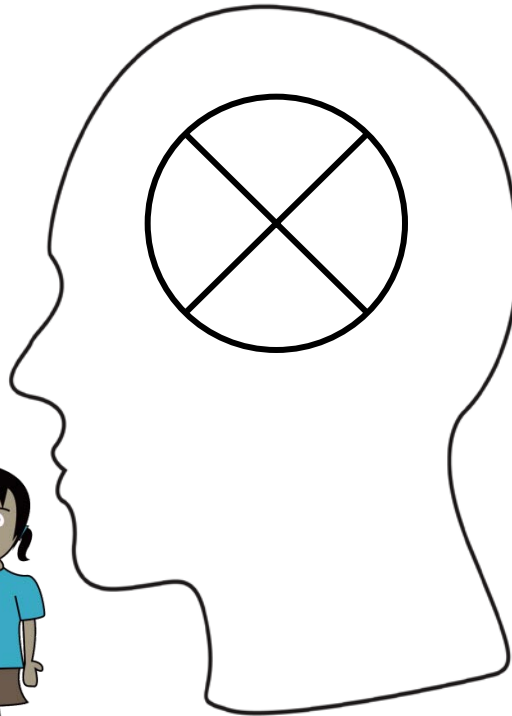


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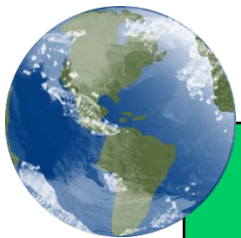
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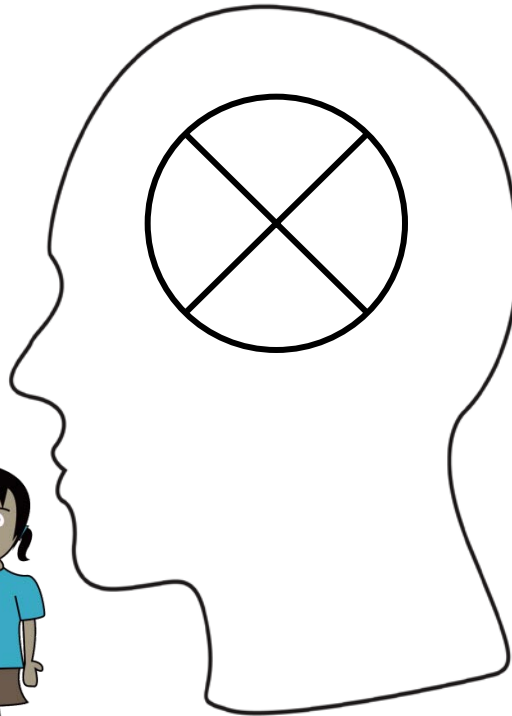


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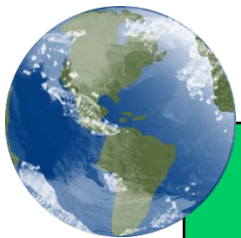
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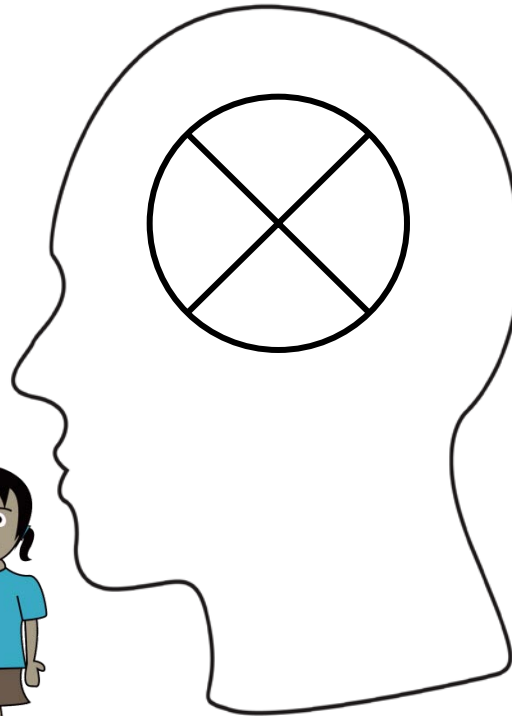


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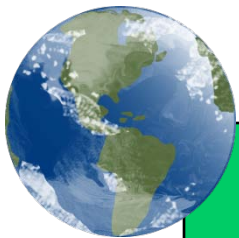
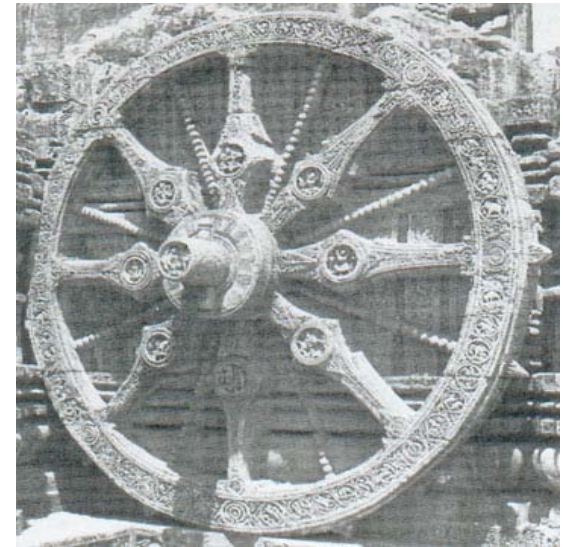
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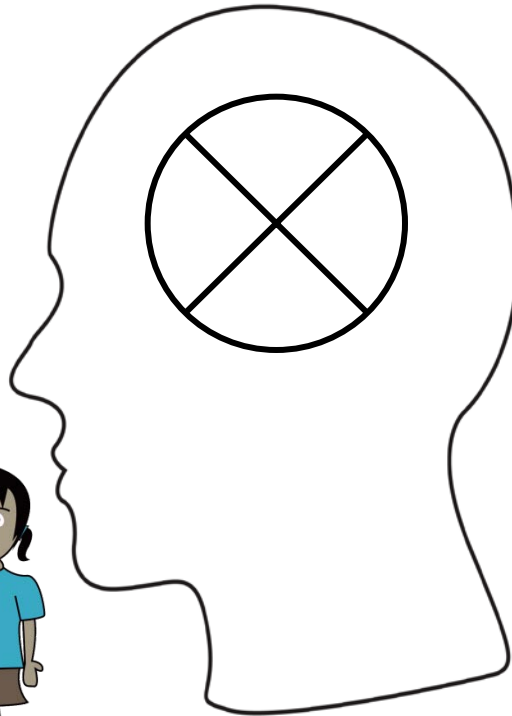


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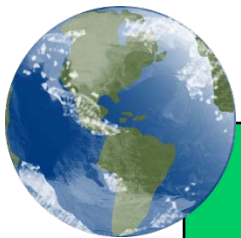
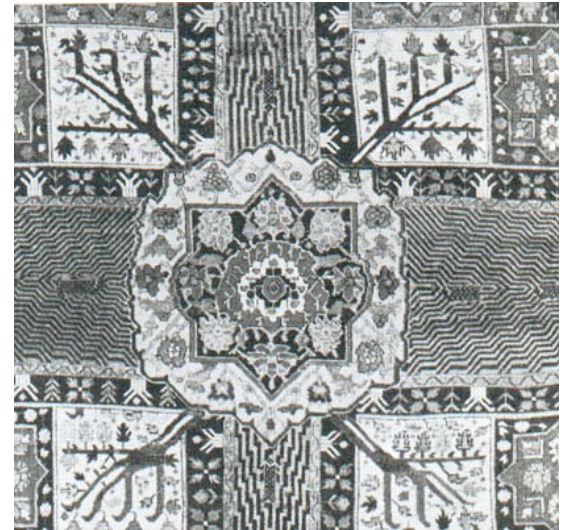
natural



ideal



abstract



PATTERN

**expression tied to
cultural value & use**

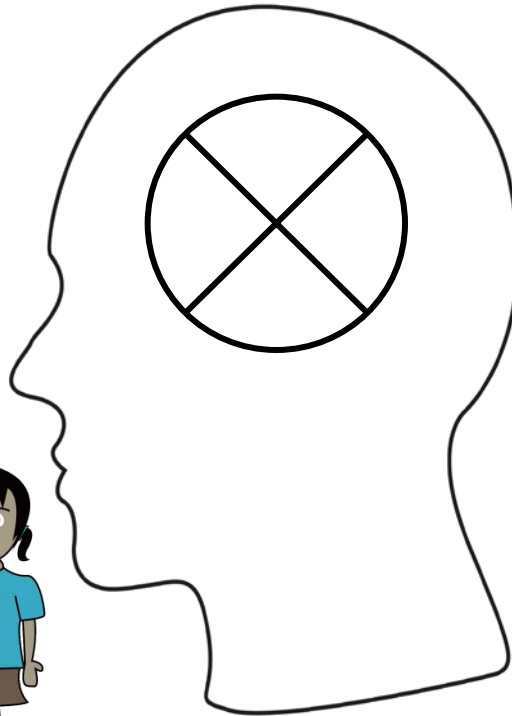


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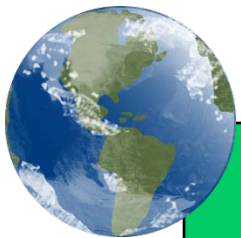
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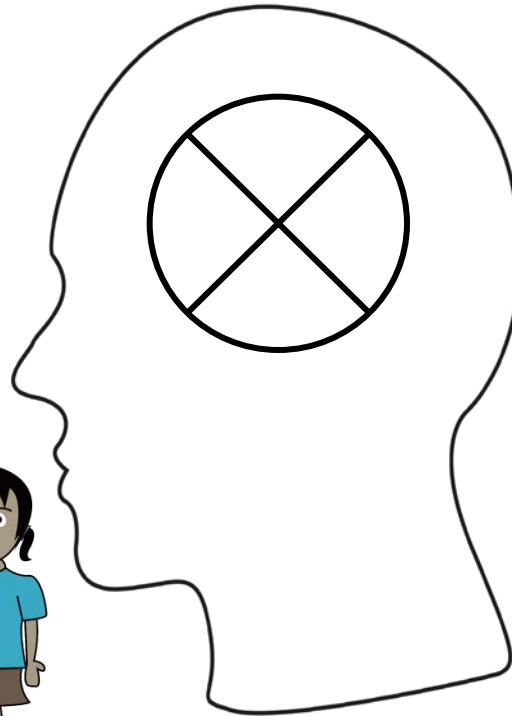


Medicine Wheel ... reflecting natural pattern:

natural



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abstract



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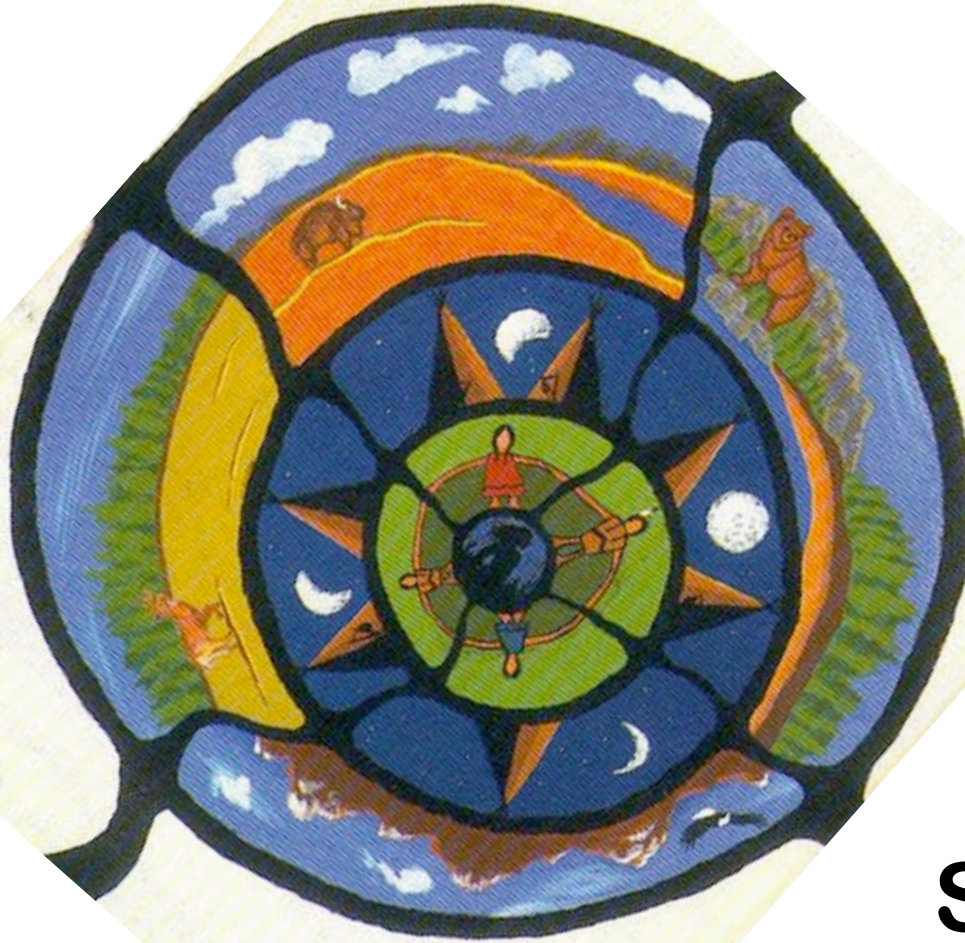
Natural
Horizons"

in

Science
Education



**Sense of Place,
Emergence,
and Participation**



Artist: Rod Restoule
from: *Into the Daylight*;
C. Morrisseau, 1998

CAPE BRETON UNIVERSITY



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Canada Foundation for Innovation / Fondation canadienne pour l'innovation



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IAPH

Thank You

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