

# Marking 8 Billion in the Classroom with Population Education

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BARBARA HUTH AND LAURA SHORT

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POPULATION EDUCATION

# Meet the 8 Billion Milestone in Classrooms

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**MISSION:** Provide quality training and teaching materials for educators to help them cover population topics effectively in the classroom.



7,982,367,355

<https://populationeducation.org/current-population/>

# Teacher PD, Lessons, Digital Supports



1. Texas: Create seven equally sized districts containing nine population groups. Gerrymander the groups of voter populations so that two districts are majority blue safe seats, and five are majority red safe seats.

Method of gerrymandering:



Zoom Meeting: Carol Bliese (Co-host), Rafael Woldeab (Poplid), Abigail Kraus

Chat:

- From Thomas Hamer to Everyone: underwater 3/32
- From Taylor Love to Everyone: housing 3/32
- From Hayley Dubose to Everyone: houses and businesses parks
- From Ulboe Johnson to Everyone: transportation

Teacher's Zone

Pool

Names: Imani, Rafael, Lindsey, Laura, Carol

Categories on board: Schools, Malls, Shopping, Media, Food, Jobs, Leisure, People, Inventions, Laws, More, Noise, Freedom, Pollution, Easier, Clean Air

## PEOPLE AND CLIMATE CHANGE: THE DATA IS IN

People and the Planet  
Lessons for a Sustainable Future

### INTRODUCTION

There is scientific consensus that our climate is changing and it's happening at an alarming rate. Concentrations of atmospheric **carbon dioxide** are at the highest levels seen in centuries and are steadily climbing, average annual temperatures continue to soar, and all of Earth's environmental systems are suffering as a result. The root cause of all this sudden change is people. Around the dawn of the Industrial Age, human population began growing exponentially. The burning of **fossil fuels** powered a new modern life and led to a sharp increase in the amount of **greenhouse gases** in the atmosphere. This growing abundance of greenhouse gases (largely carbon dioxide) has had a ripple effect around the world, causing temperatures to increase, ice to melt, and, ultimately, seas to rise.

Scientists continuously collect **data** to monitor the many

### CONCEPT

The Earth's climate is changing rapidly due to the rise in greenhouse gas emissions from human activity. Climate change impacts all of Earth's systems and these changes are evident in graphic, written and visual data.

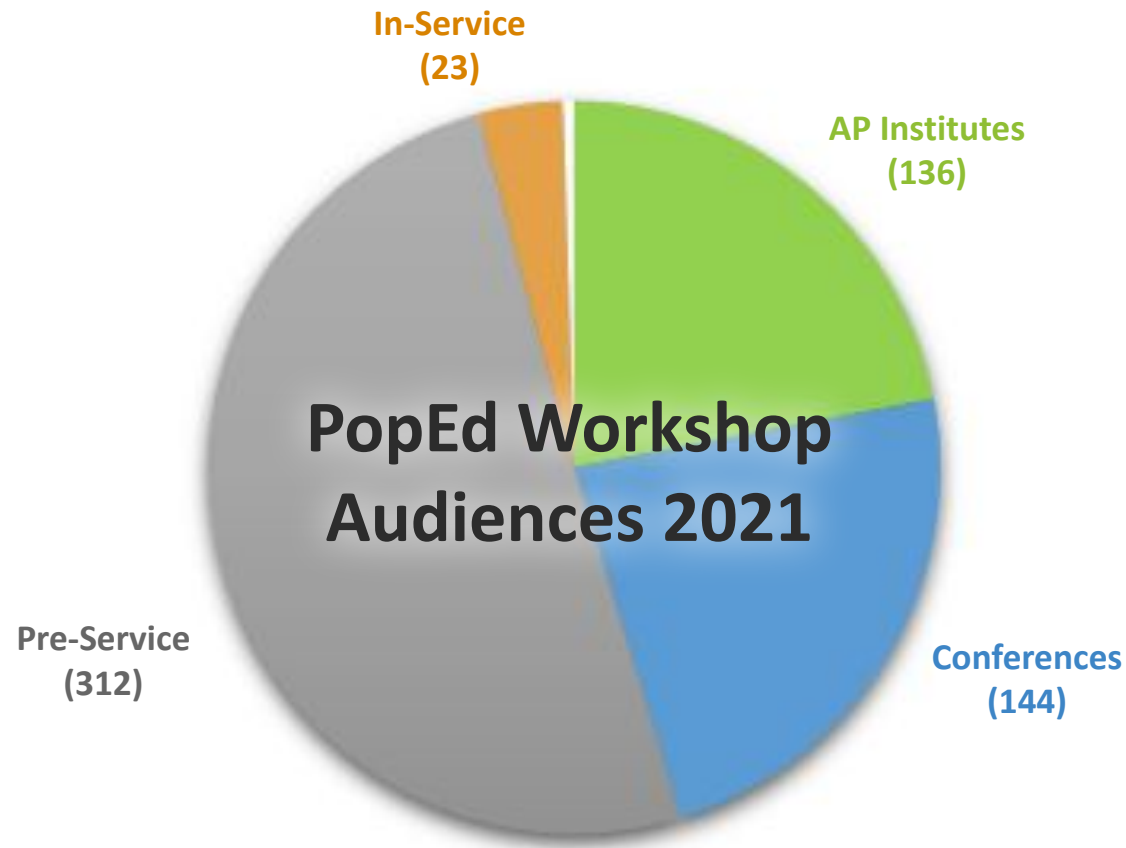
### OBJECTIVES

Students will be able to:

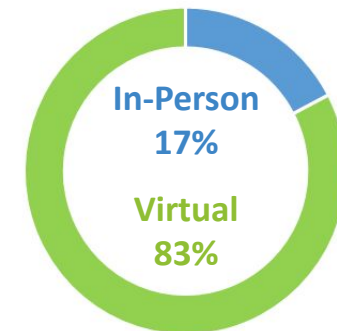
- Interpret information of various formats (graphic, written, and visual) and draw meaningful conclusions.
- Consider the benefits and drawbacks of certain types of data representation.

# Who We Reached in 2021:

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- **618** PopEd workshops
- **689** volunteer trainers
- **48** US states and territories and **6** Canadian provinces
- Virtual resources for digital teaching



# Favorite Resources for 8 Billion

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1. Population Circle
2. World of 8 Billion student video competition
3. Carbon Crunch
4. Lessons for Life
5. Trash Trouble in Paradise

# Population Circle

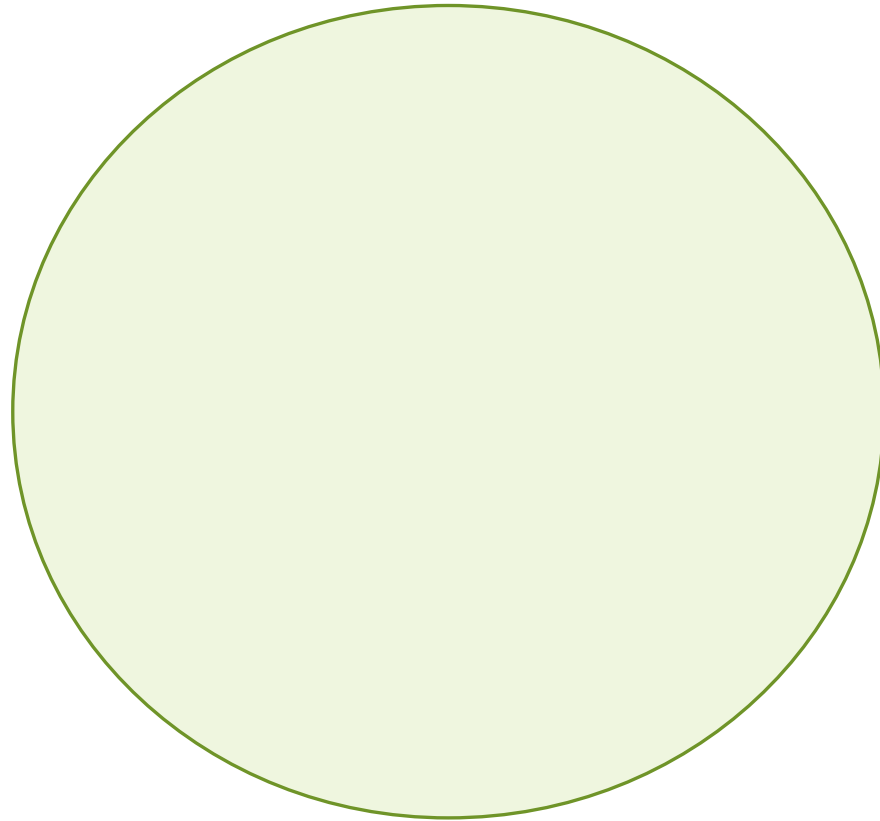
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THROUGH A LARGE GROUP SIMULATION, STUDENTS EXPERIENCE THE CHANGING PACE OF HUMAN POPULATION GROWTH OVER THE PAST 500 YEARS.

# Instructions

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Circle = Earth



# Instructions

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Each student in the circle =  
250 million people

Travel through time over the  
past 500 years, 1525-2025

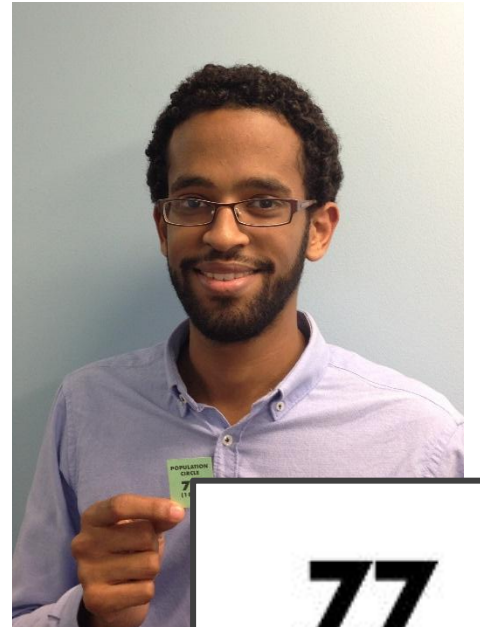
Count from 1 to 100; Each  
number = 5 years







**0**  
(1525)

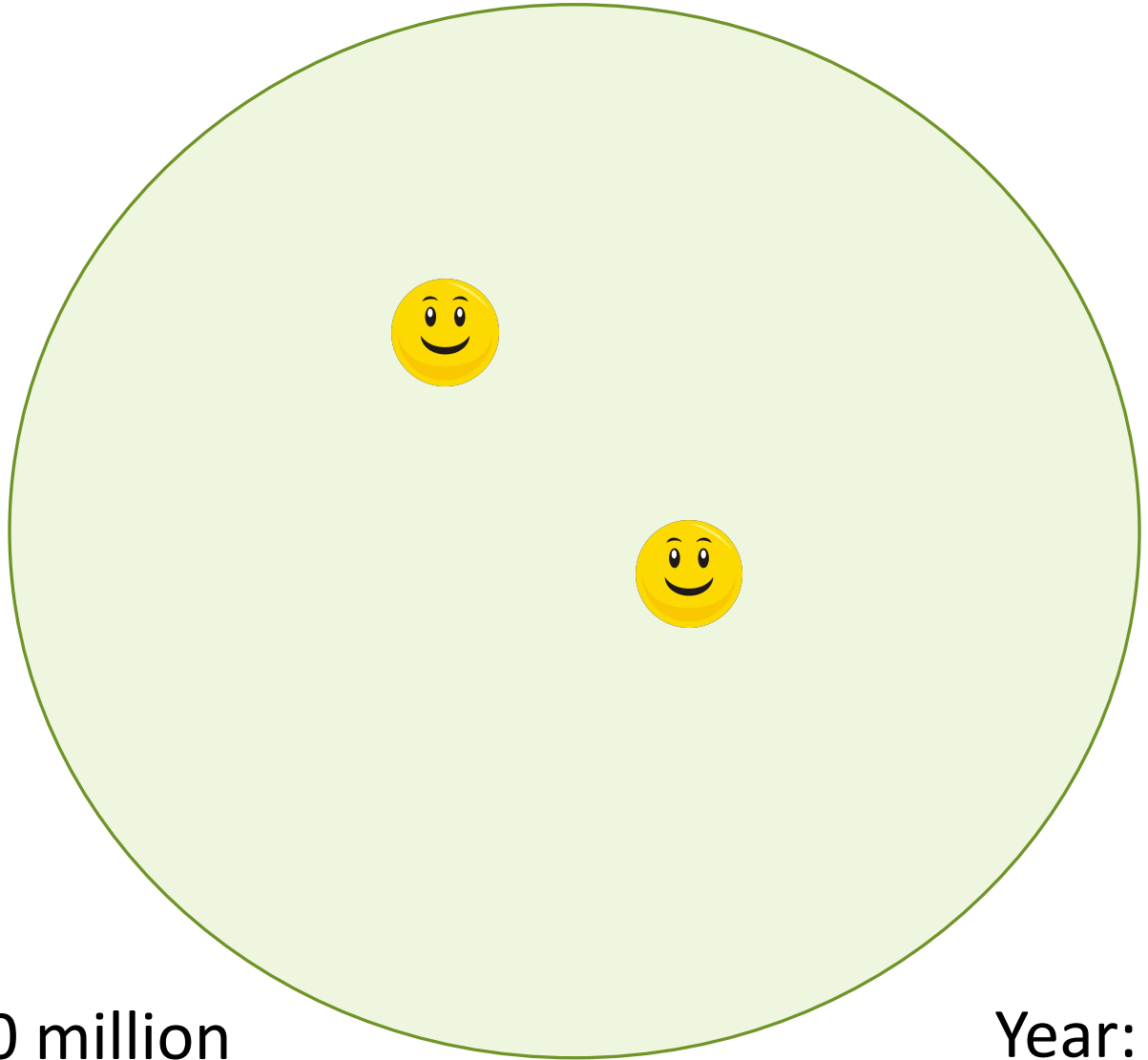


**77**  
(1910)



# Population Circle

0

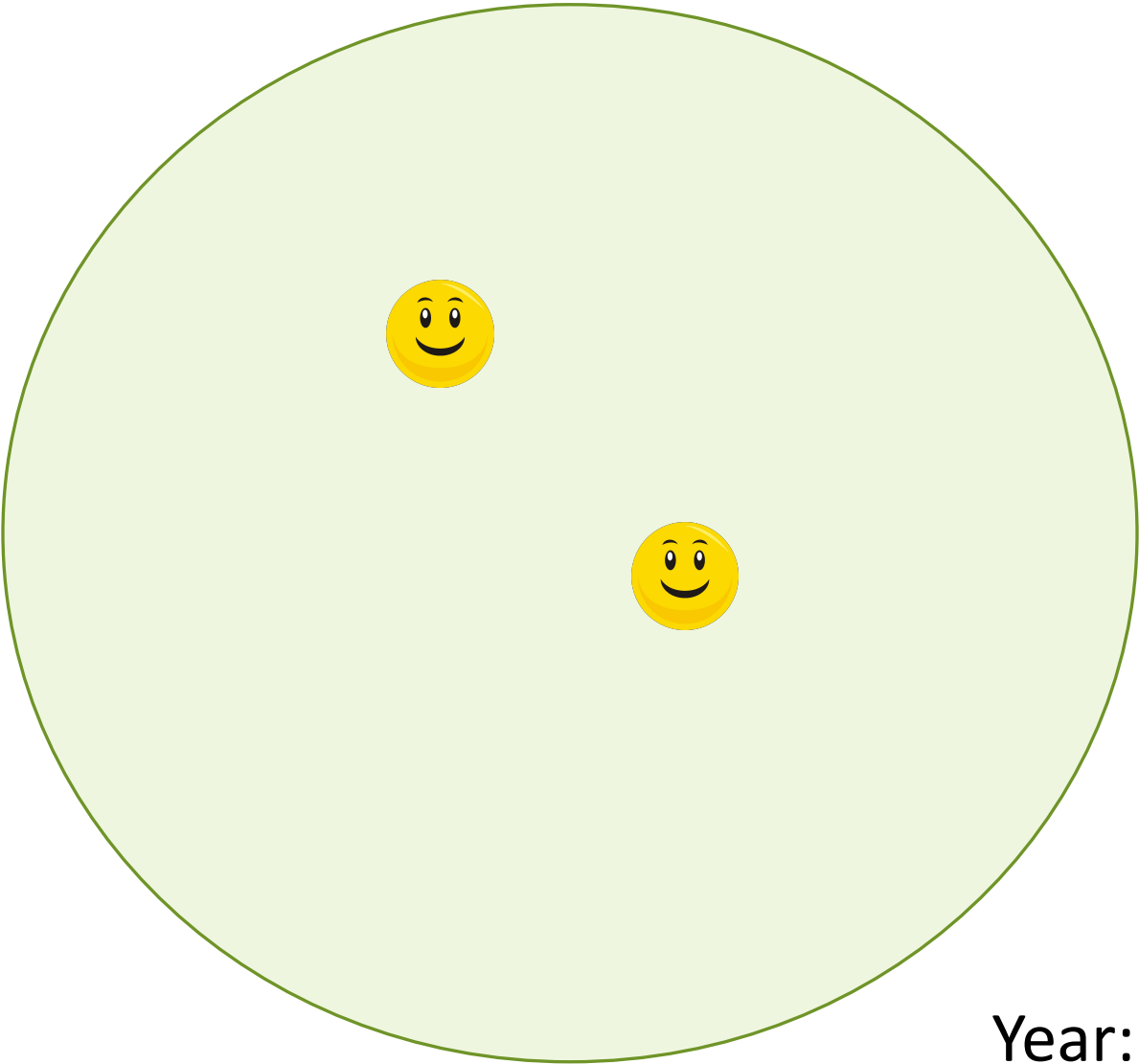


😊 = 250 million

Year: 1525

# Population Circle

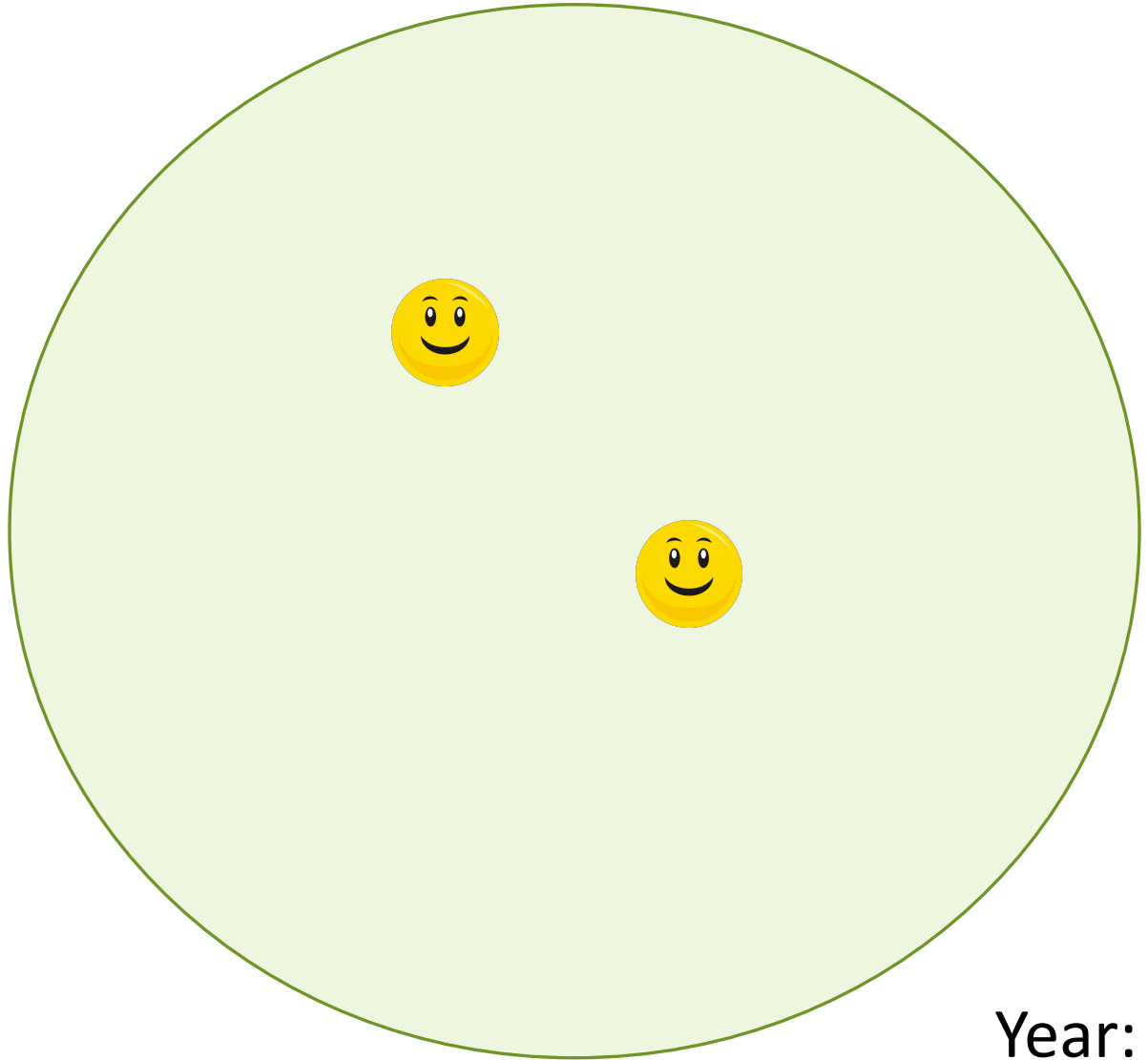
1



Year: 1530

# Population Circle

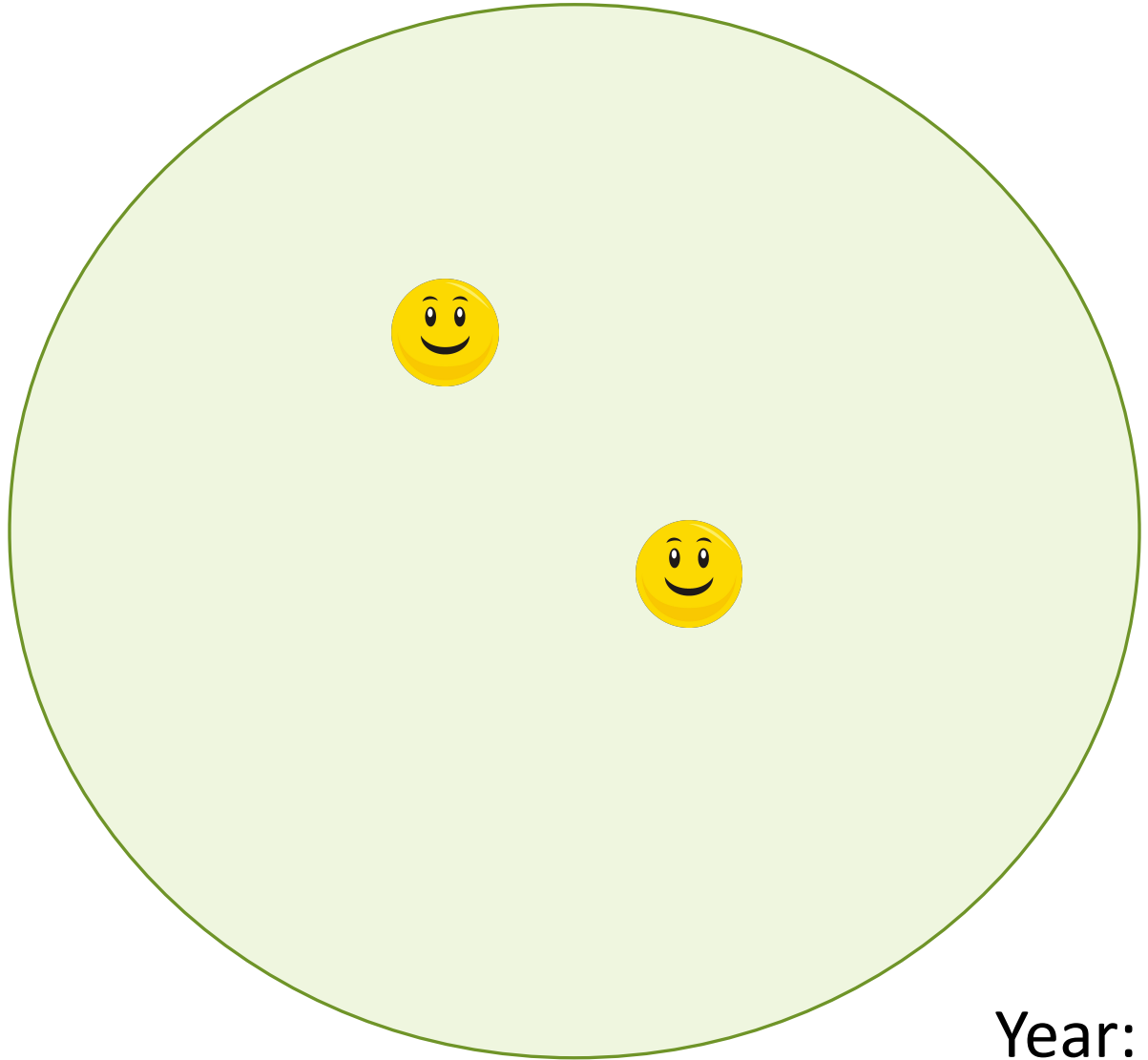
2



Year: 1535

# Population Circle

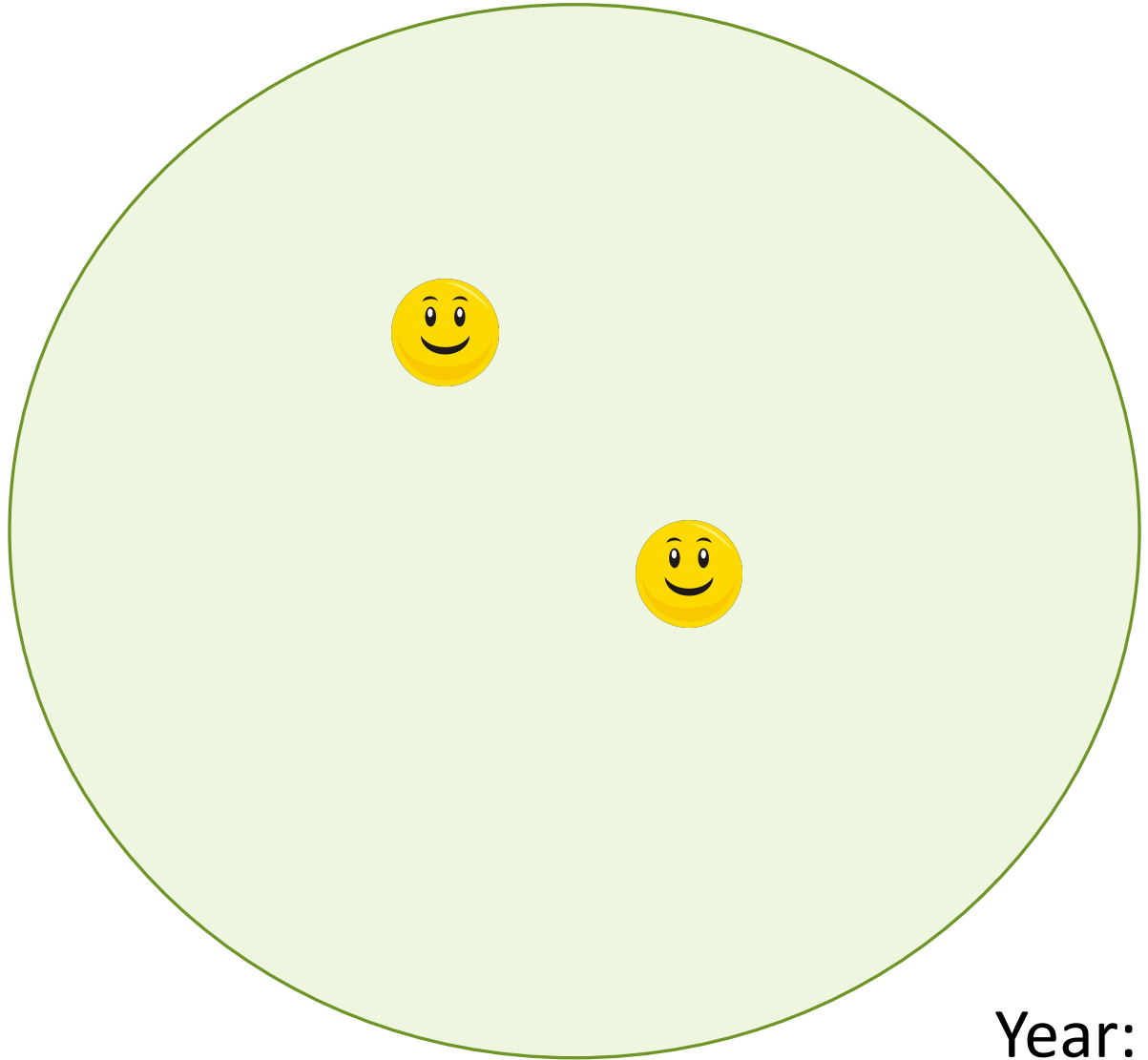
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Year: 1540

# Population Circle

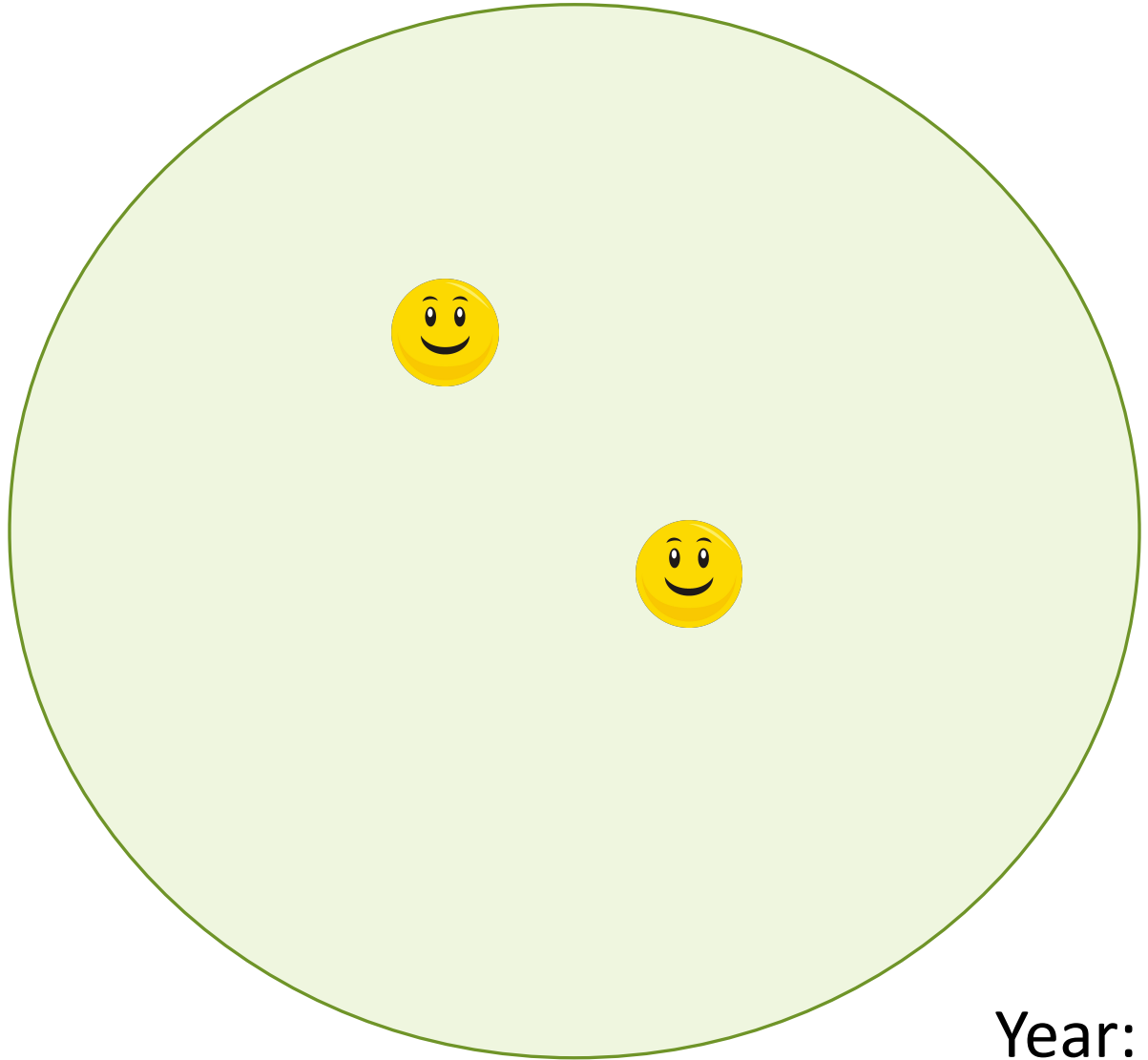
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Year: 1545

# Population Circle

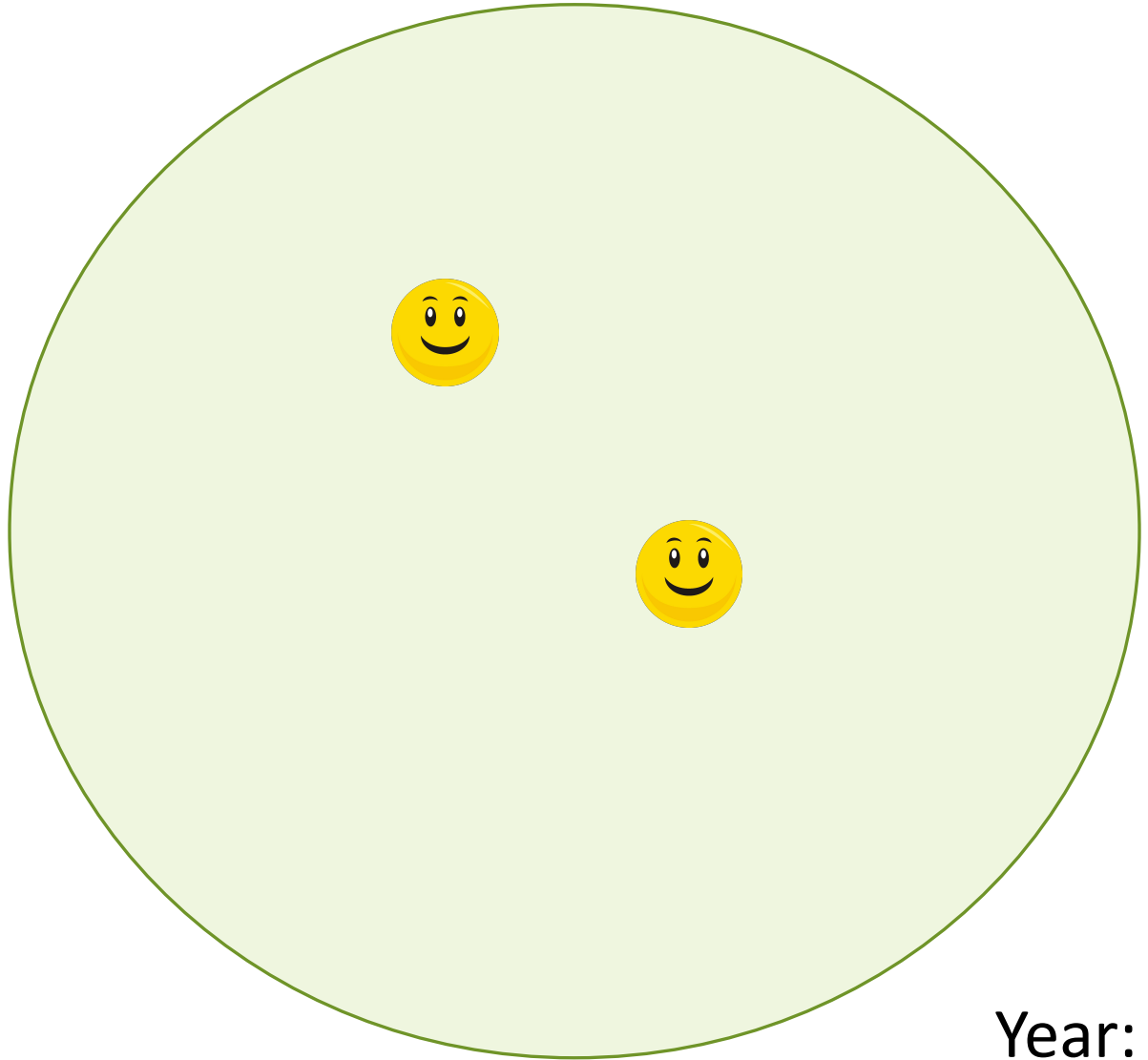
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Year: 1550

# Population Circle

6

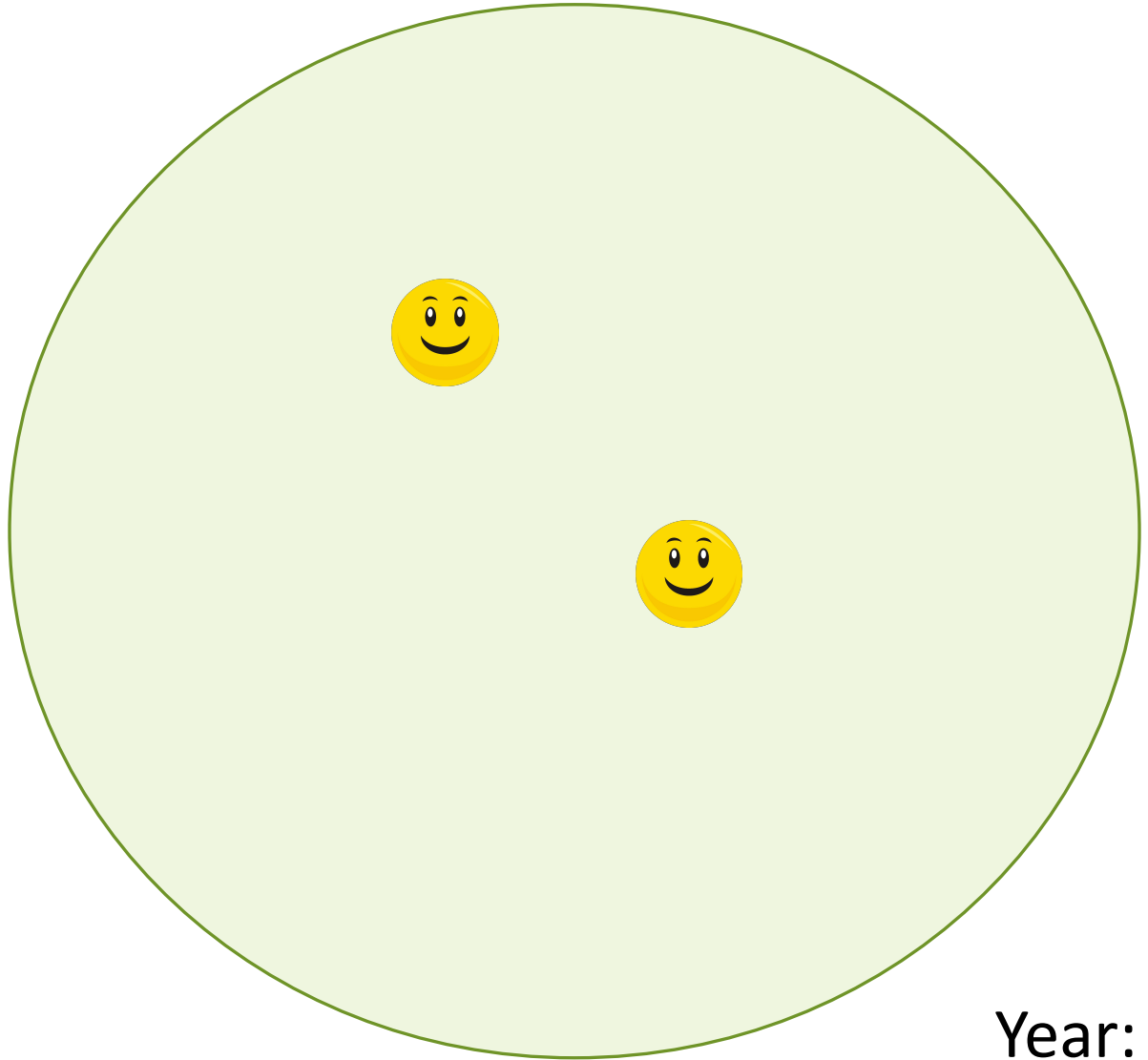


Year: 1555



# Population Circle

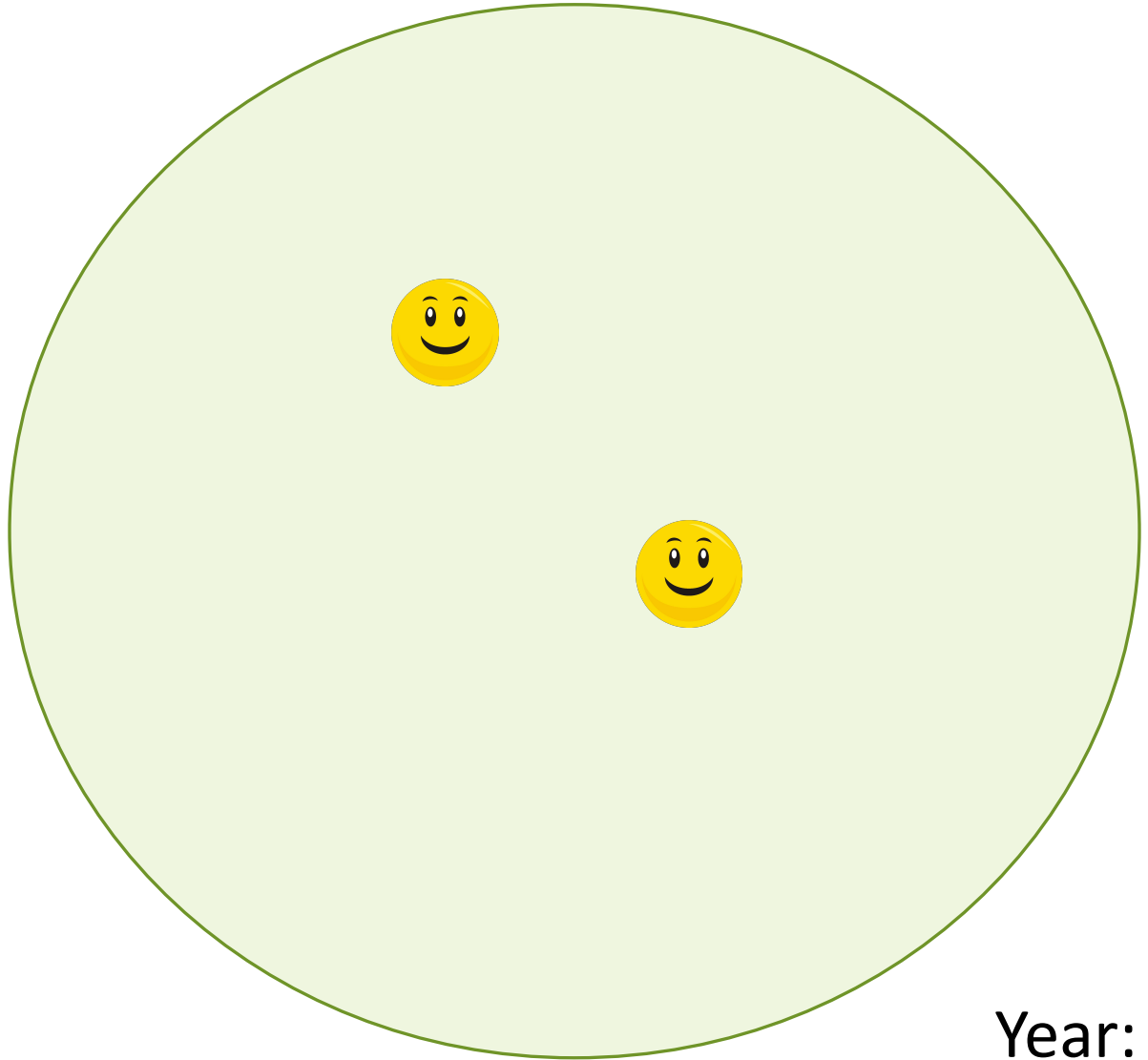
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Year: 1560

# Population Circle

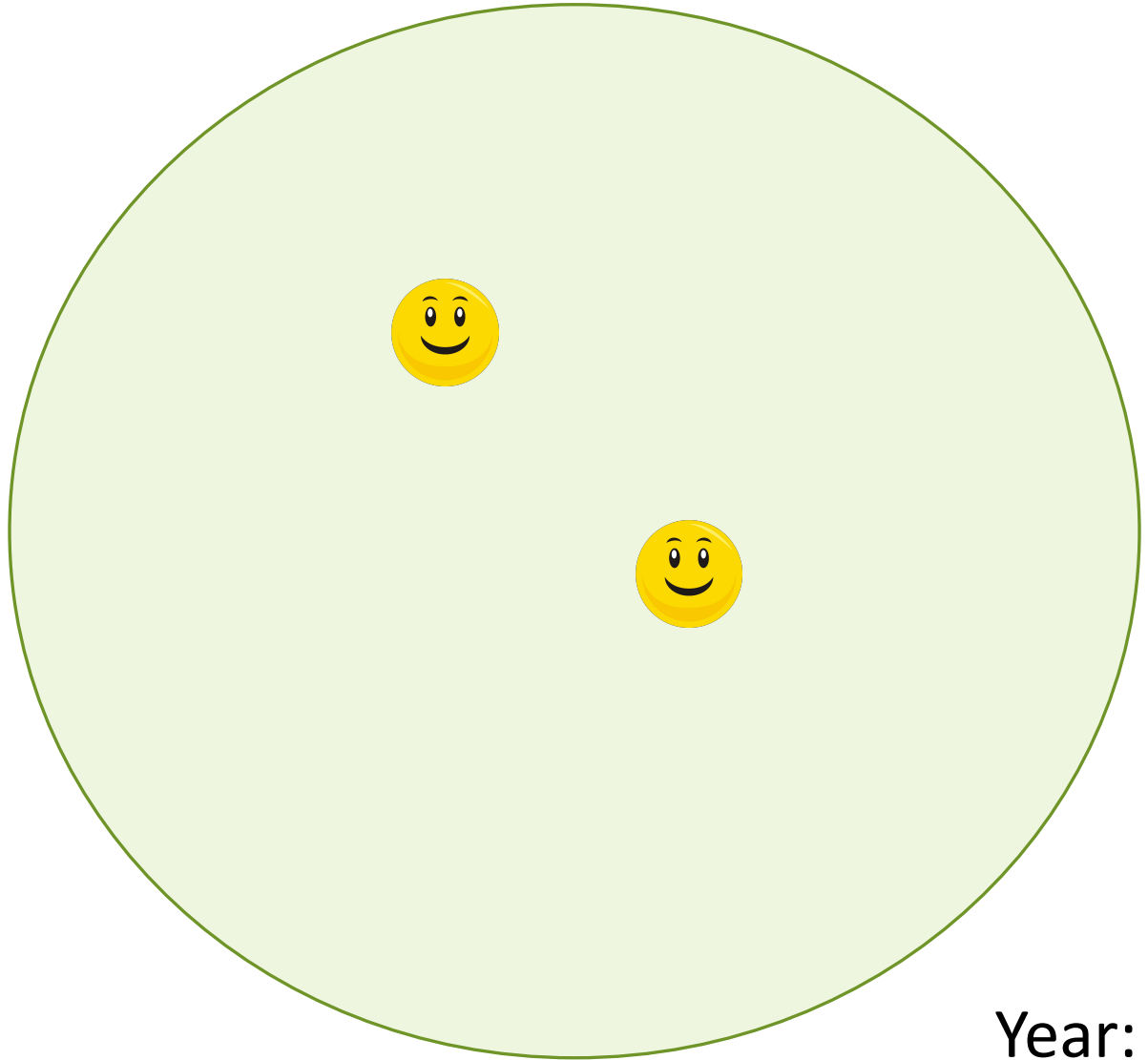
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Year: 1565

# Population Circle

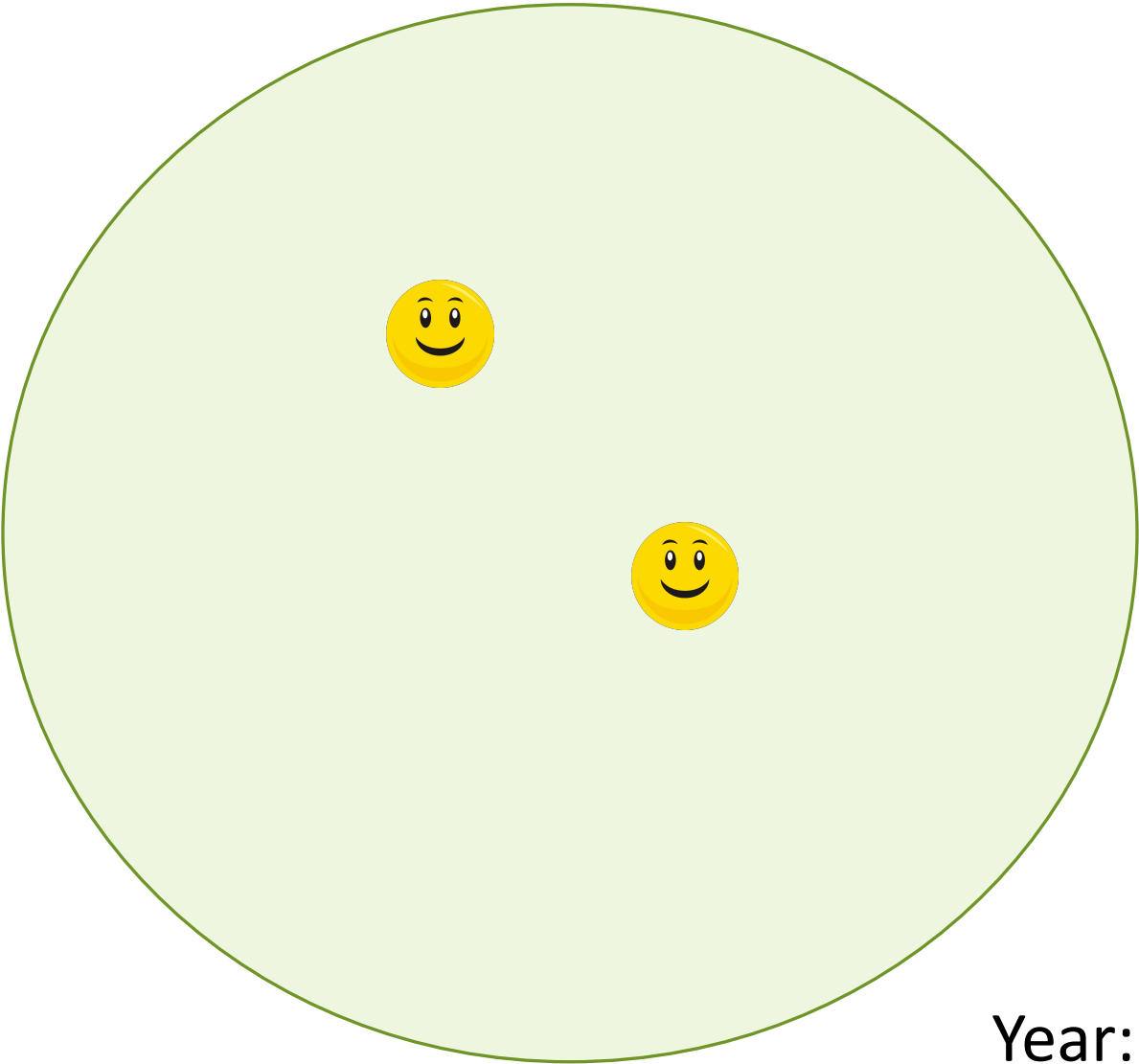
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Year: 1570

# Population Circle

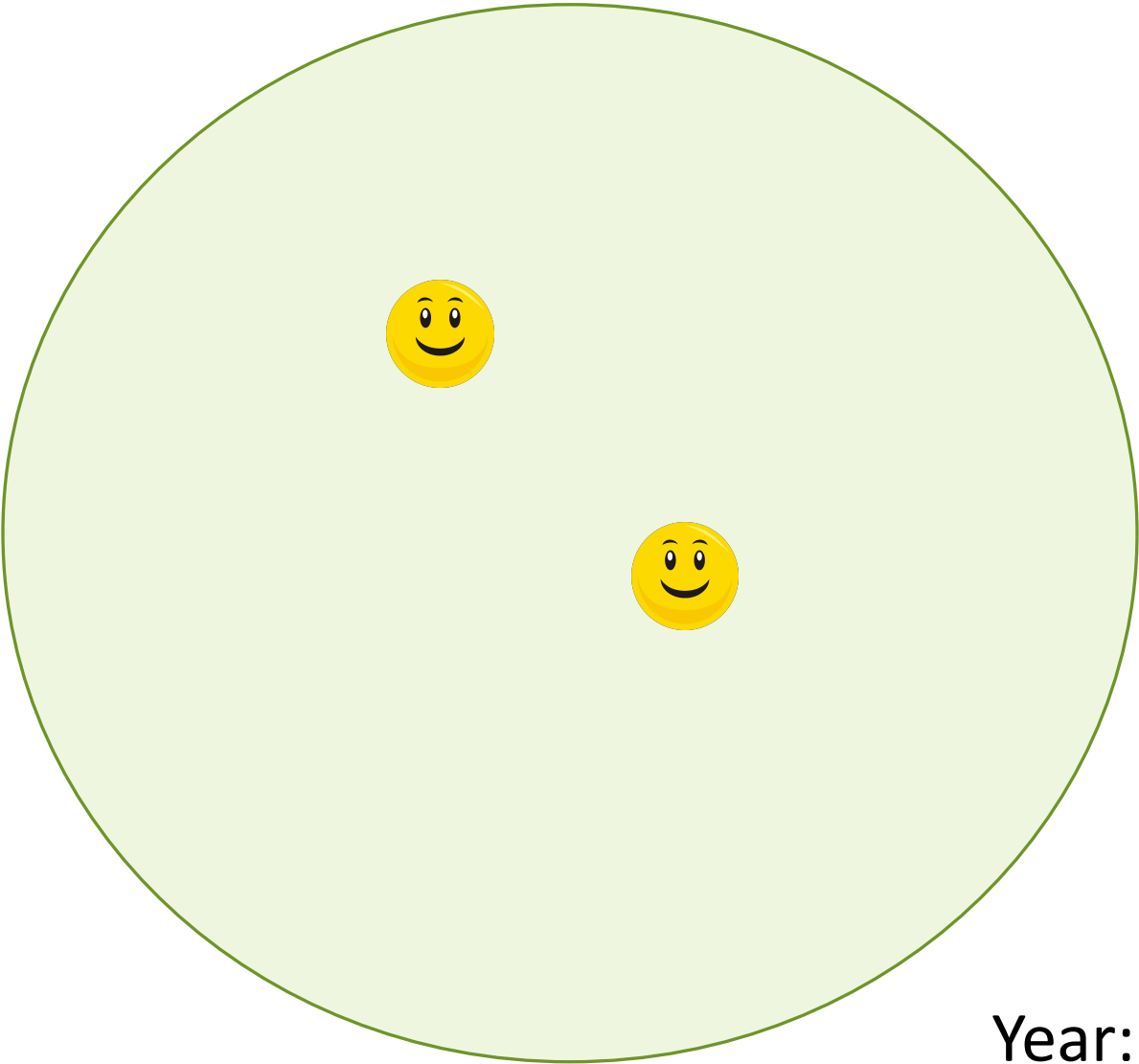
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Year: 1575

# Population Circle

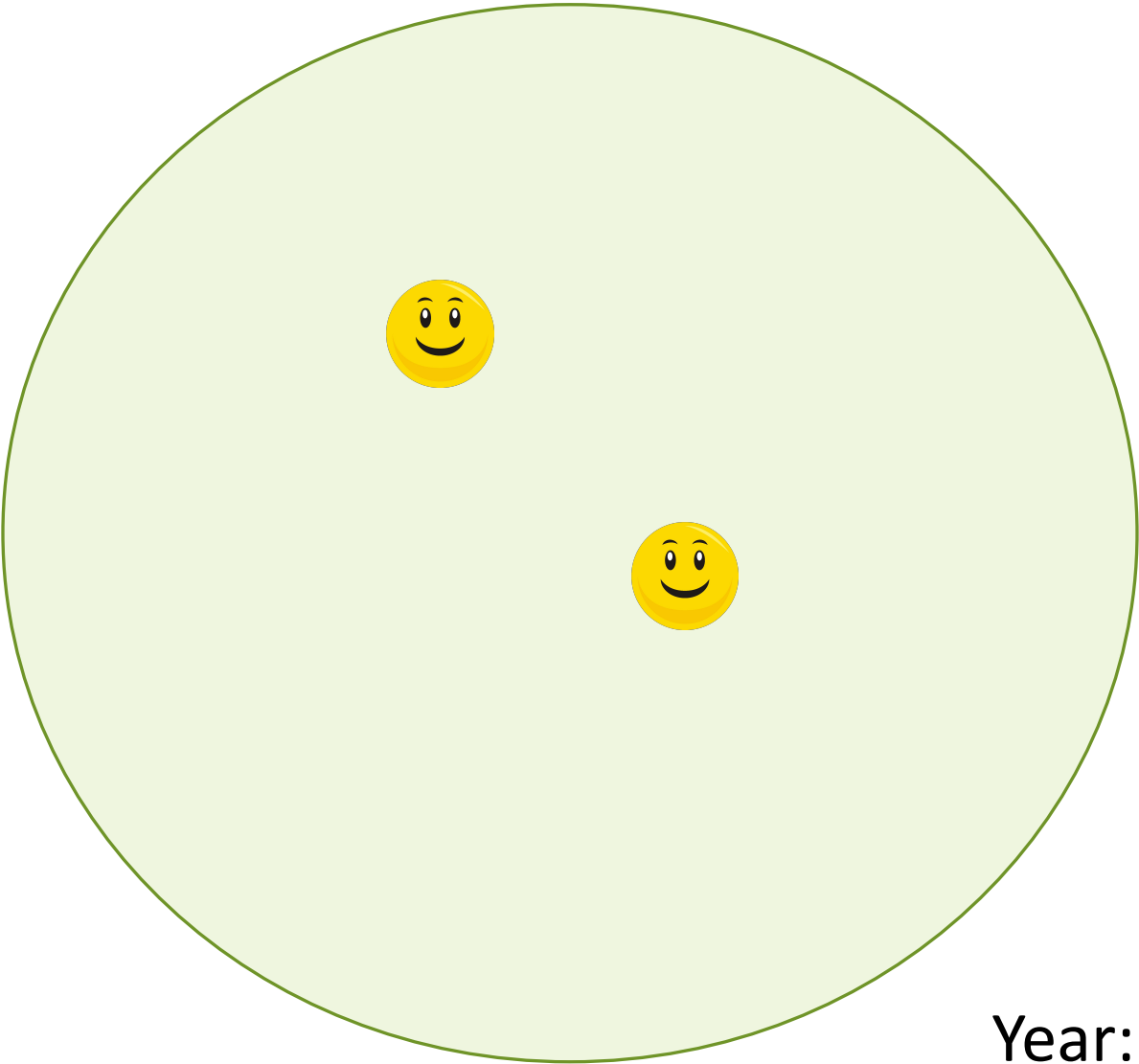
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Year: 1580

# Population Circle

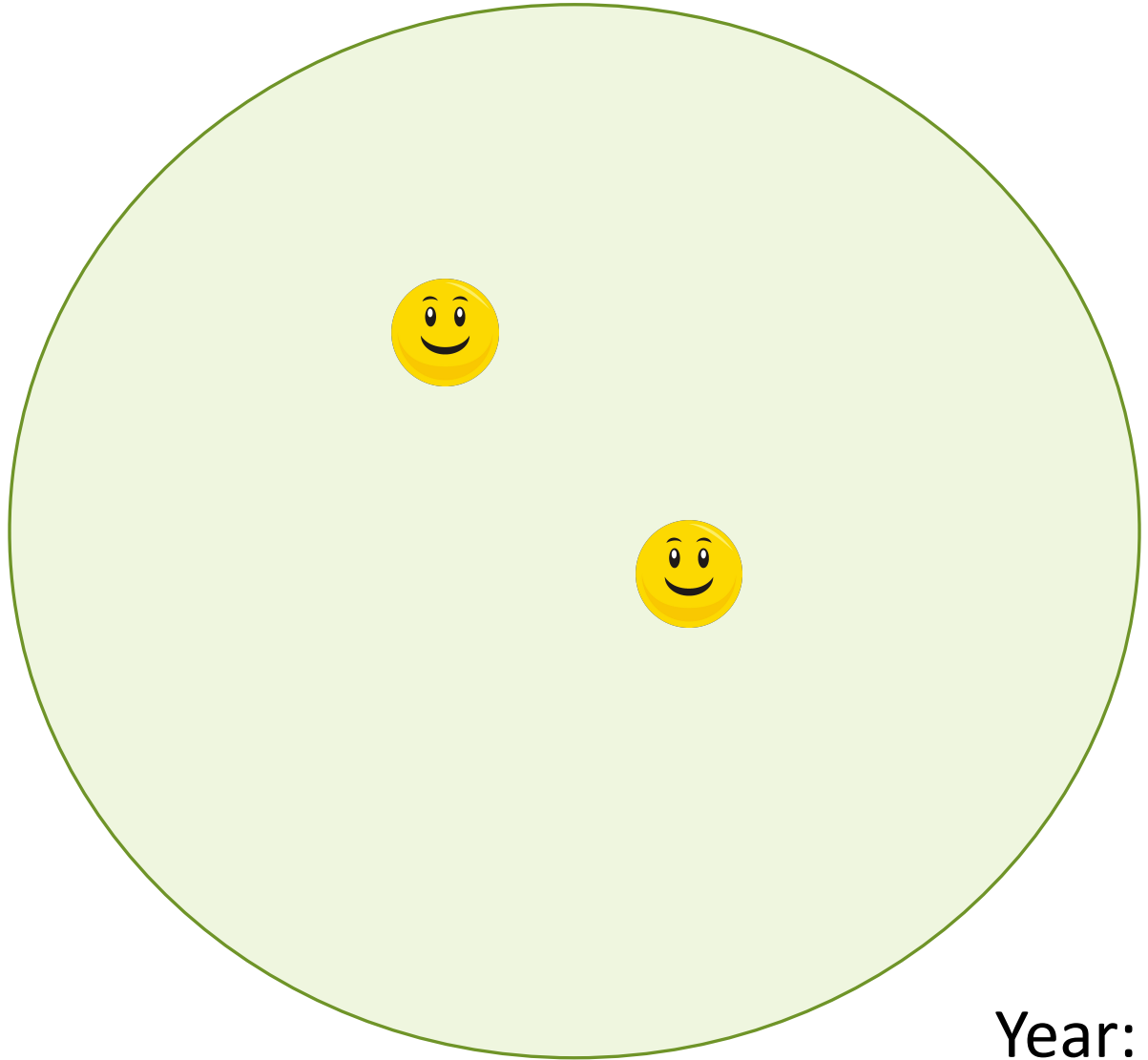
12



Year: 1585

# Population Circle

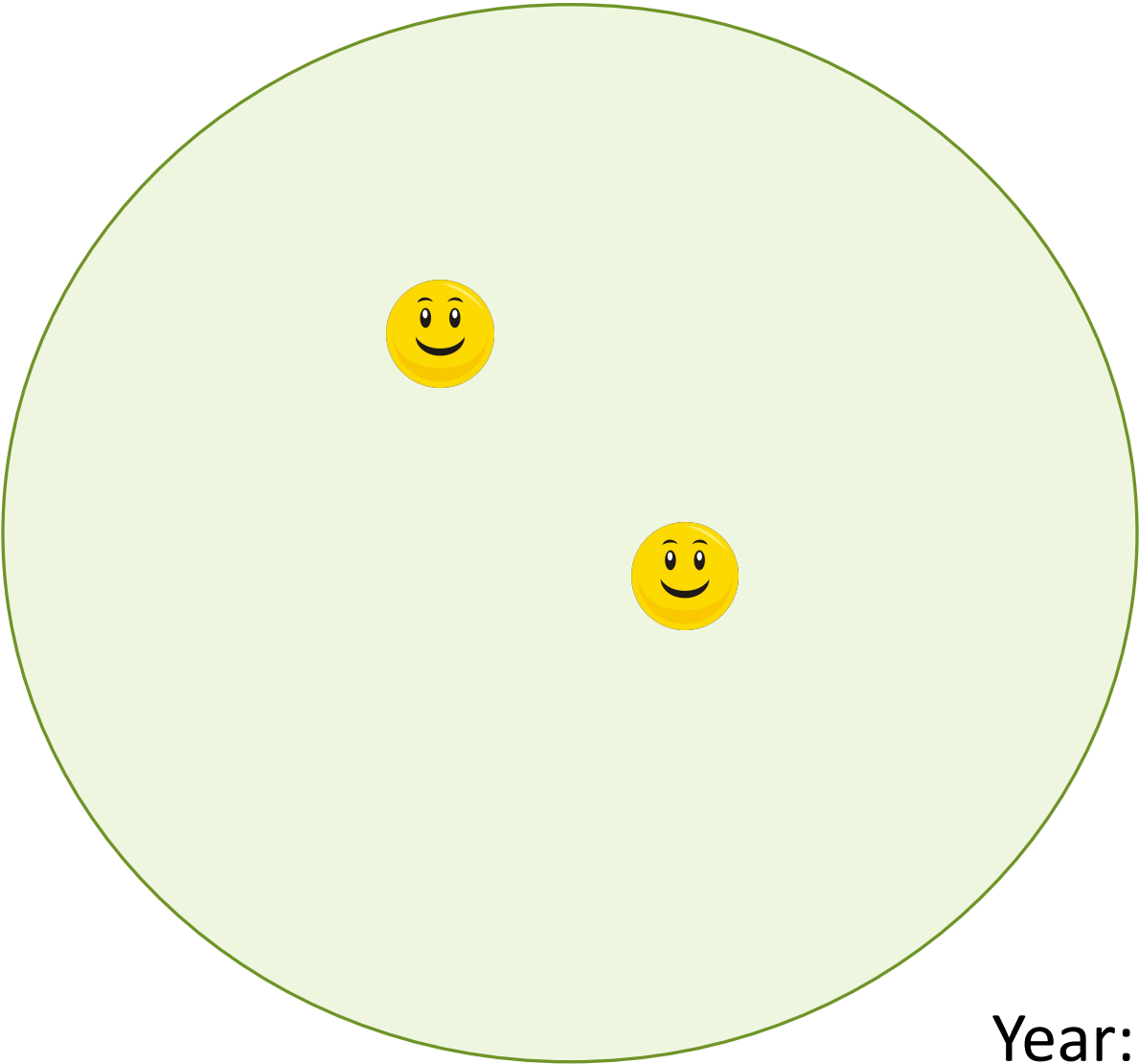
13



Year: 1590

# Population Circle

14

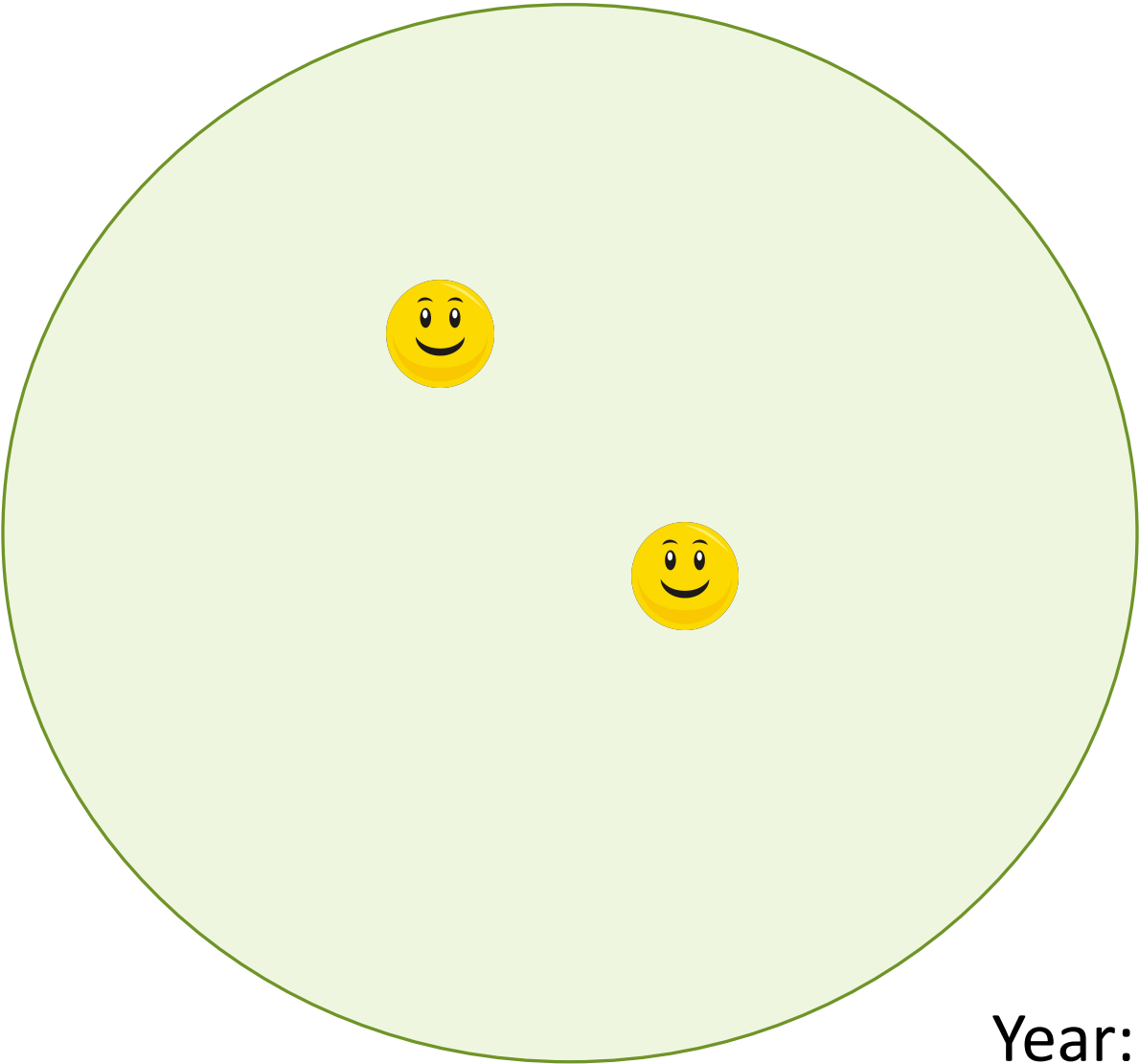


Year: 1595



# Population Circle

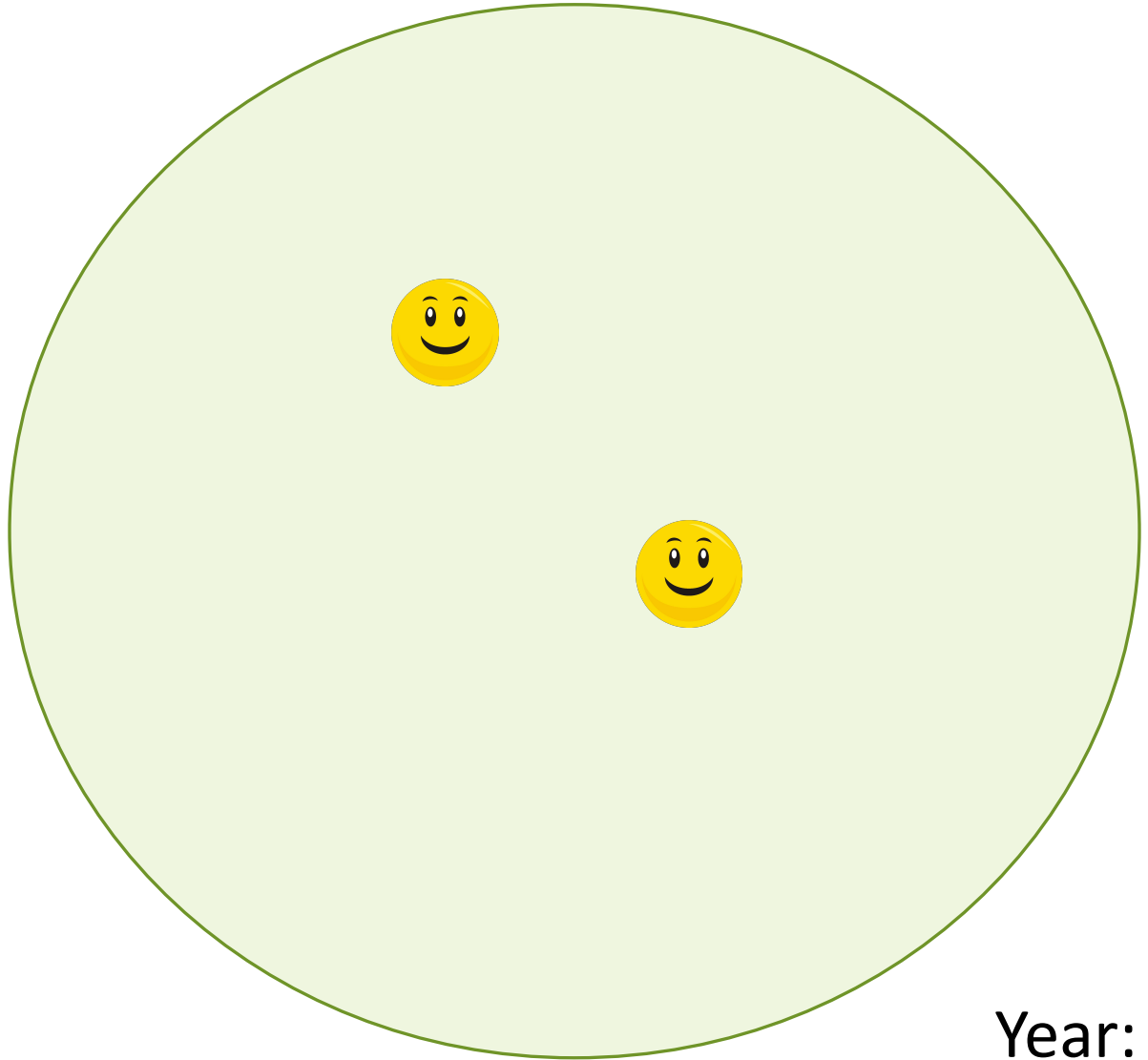
15



Year: 1600

# Population Circle

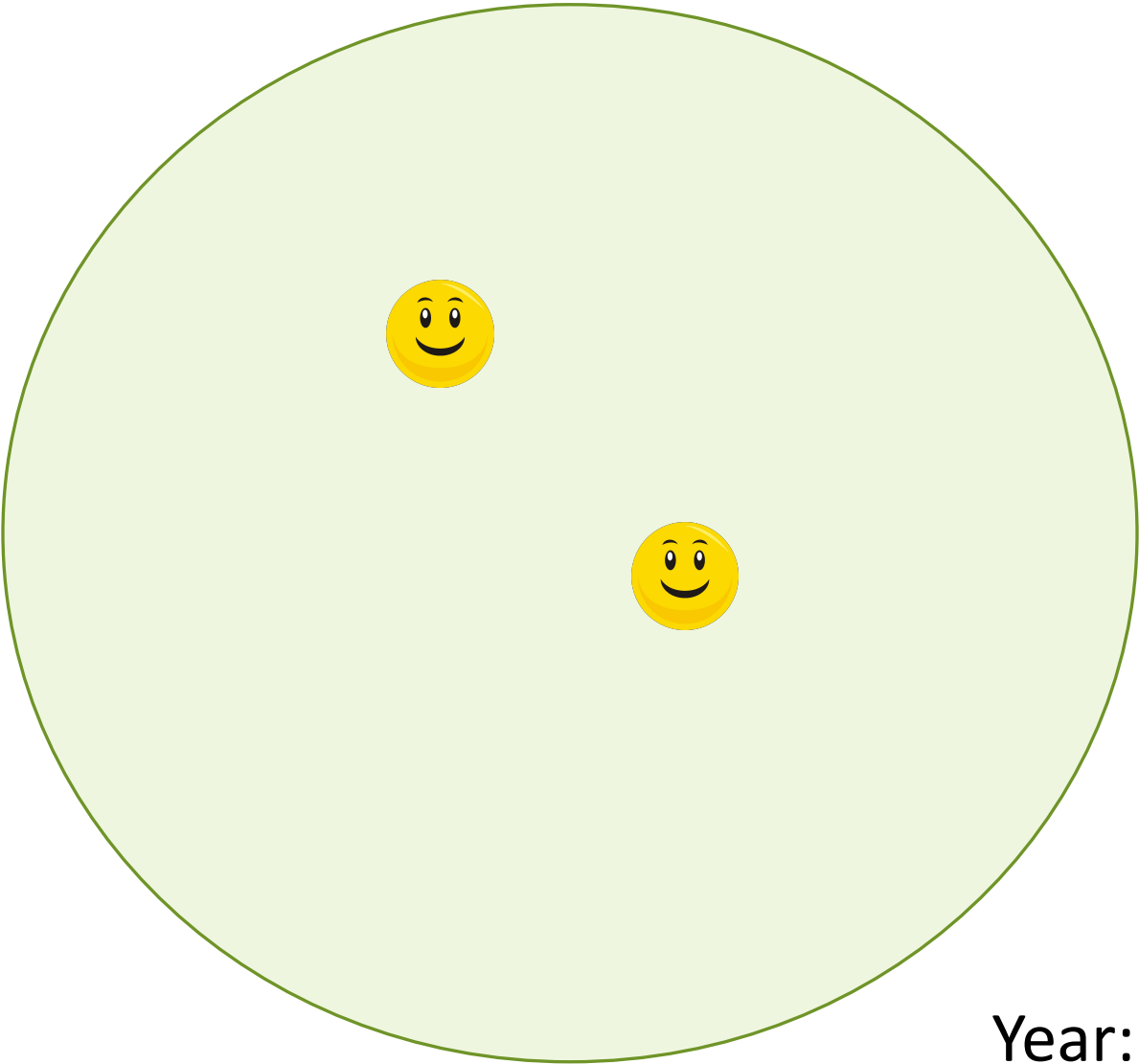
16



Year: 1605

# Population Circle

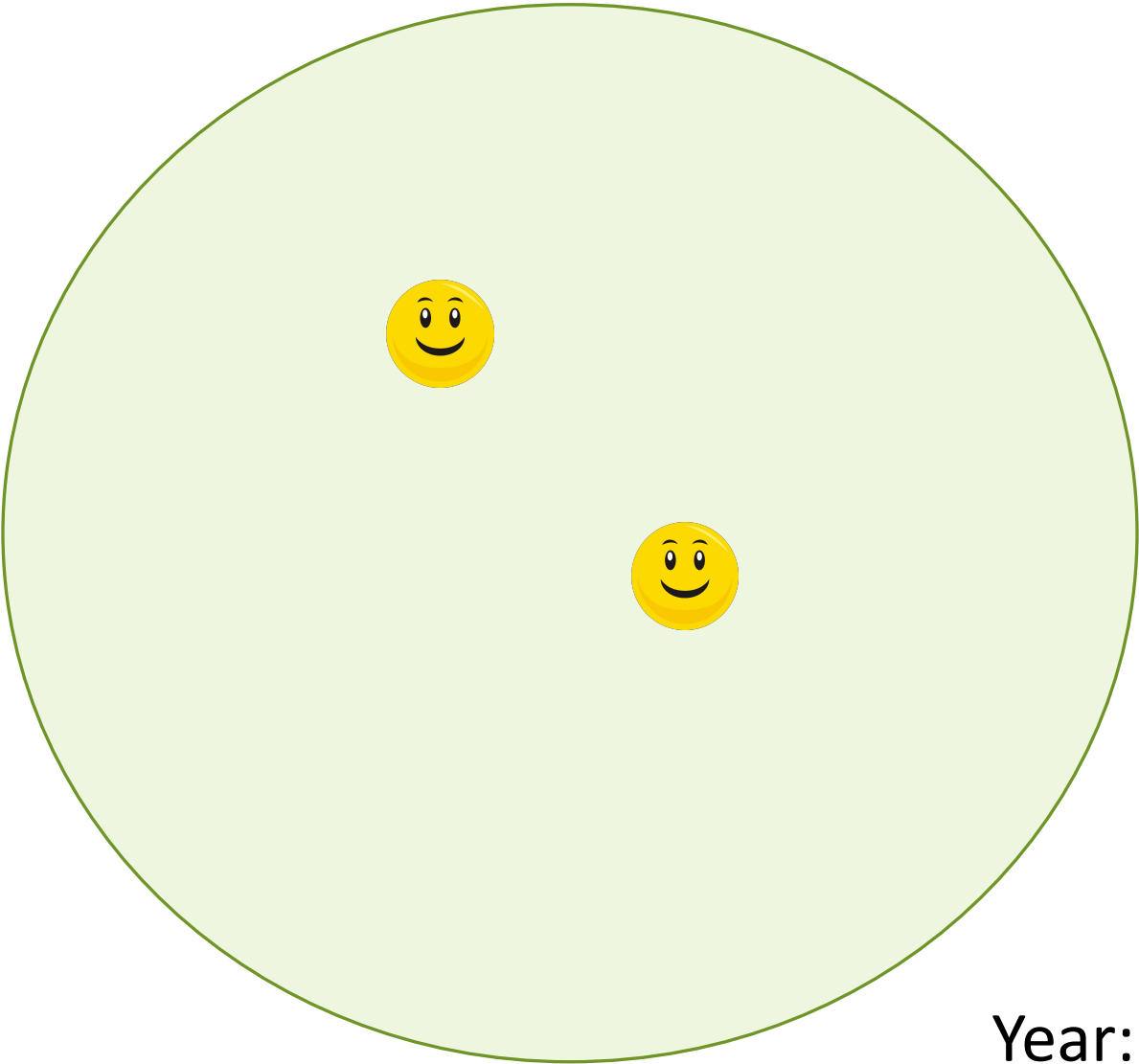
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Year: 1610

# Population Circle

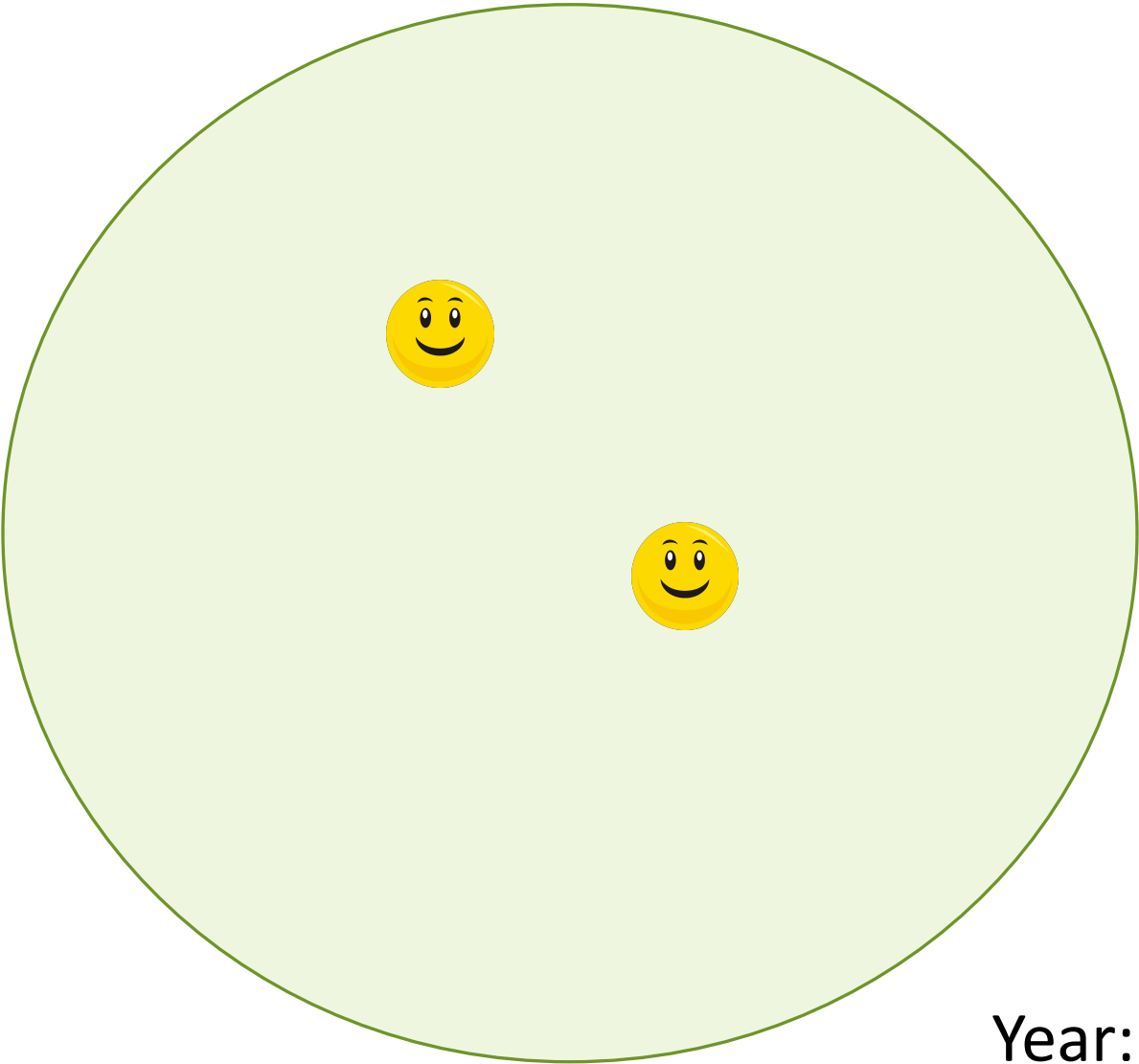
18



Year: 1615

# Population Circle

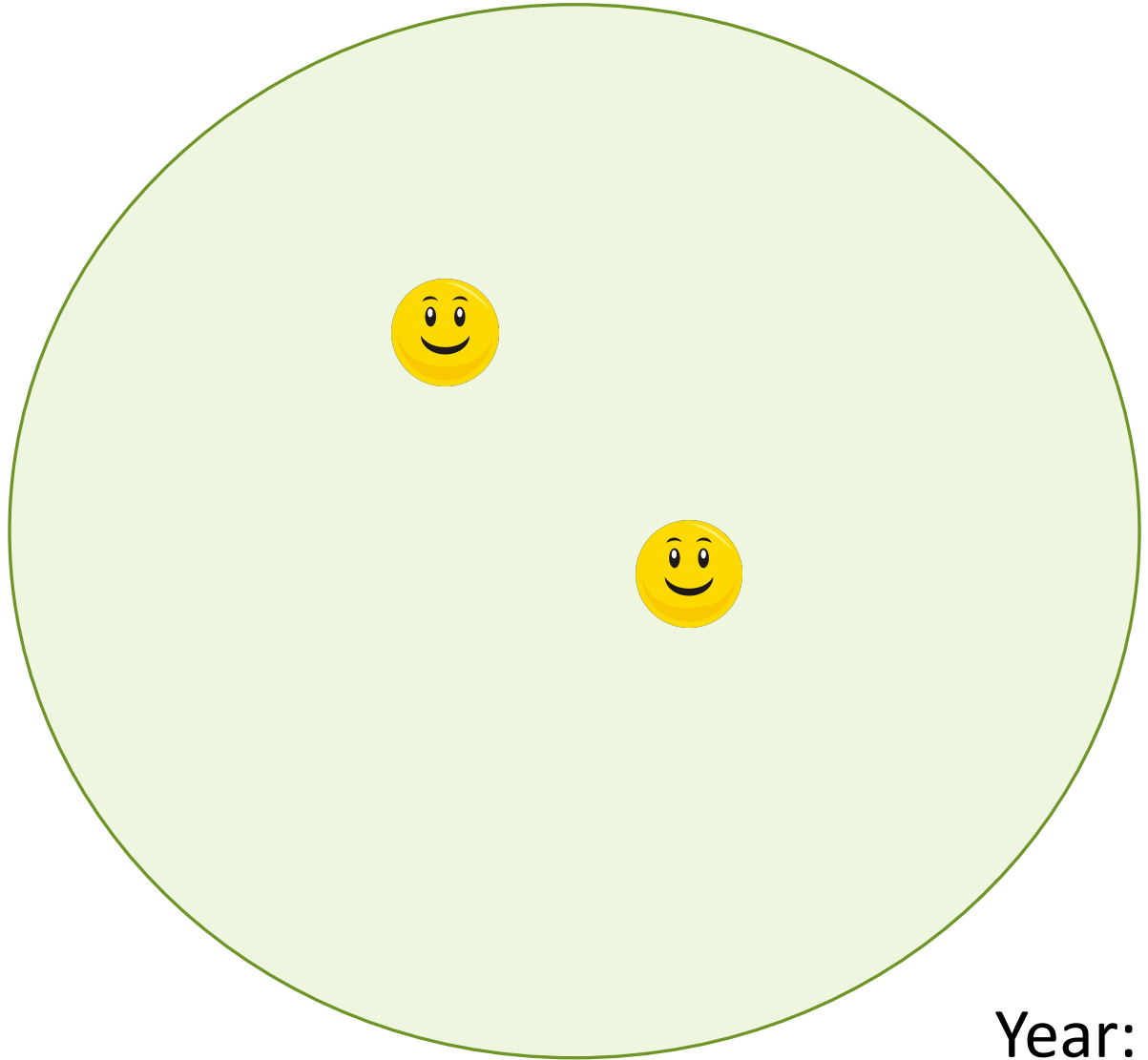
19



Year: 1620

# Population Circle

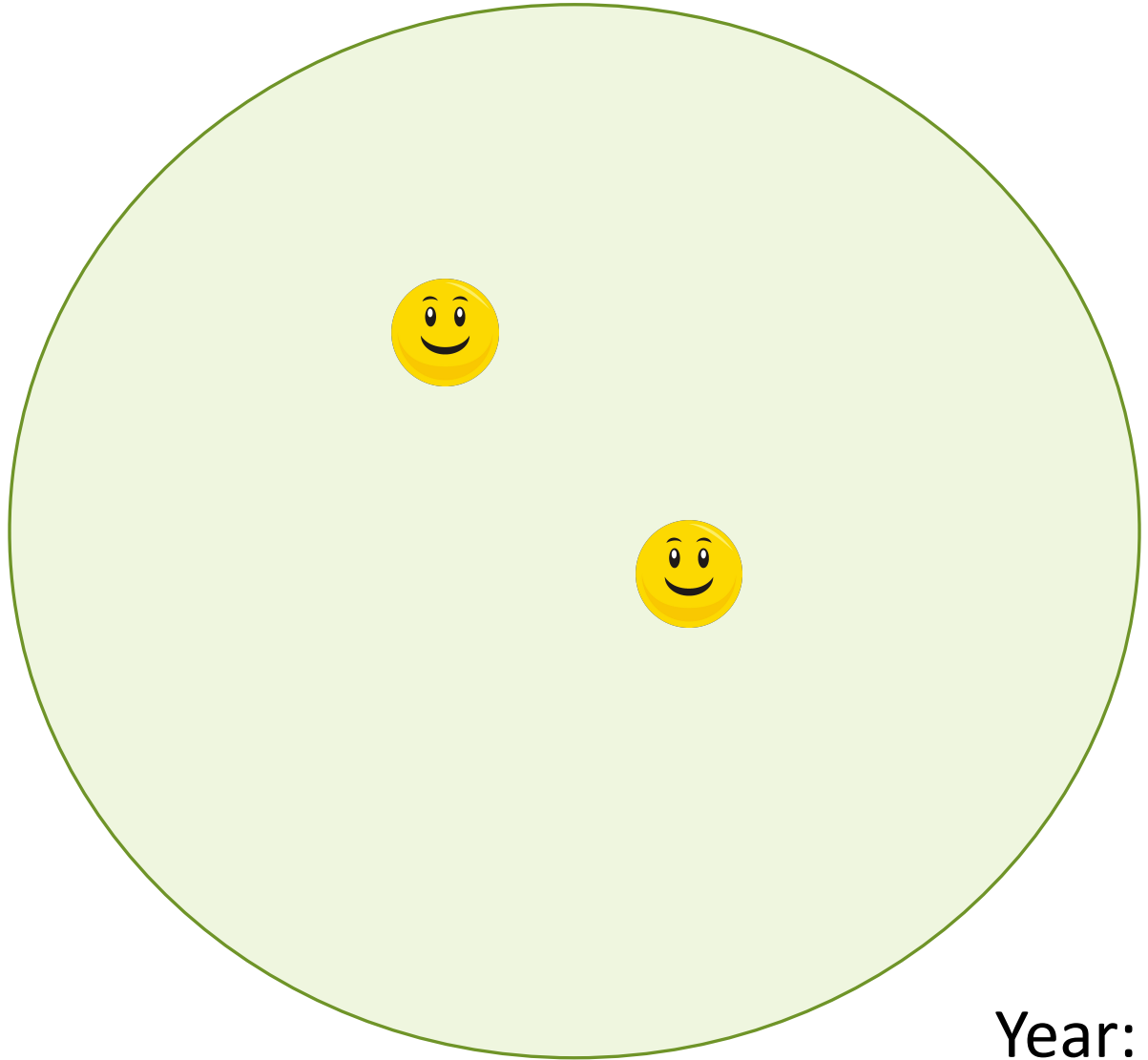
20



Year: 1625

# Population Circle

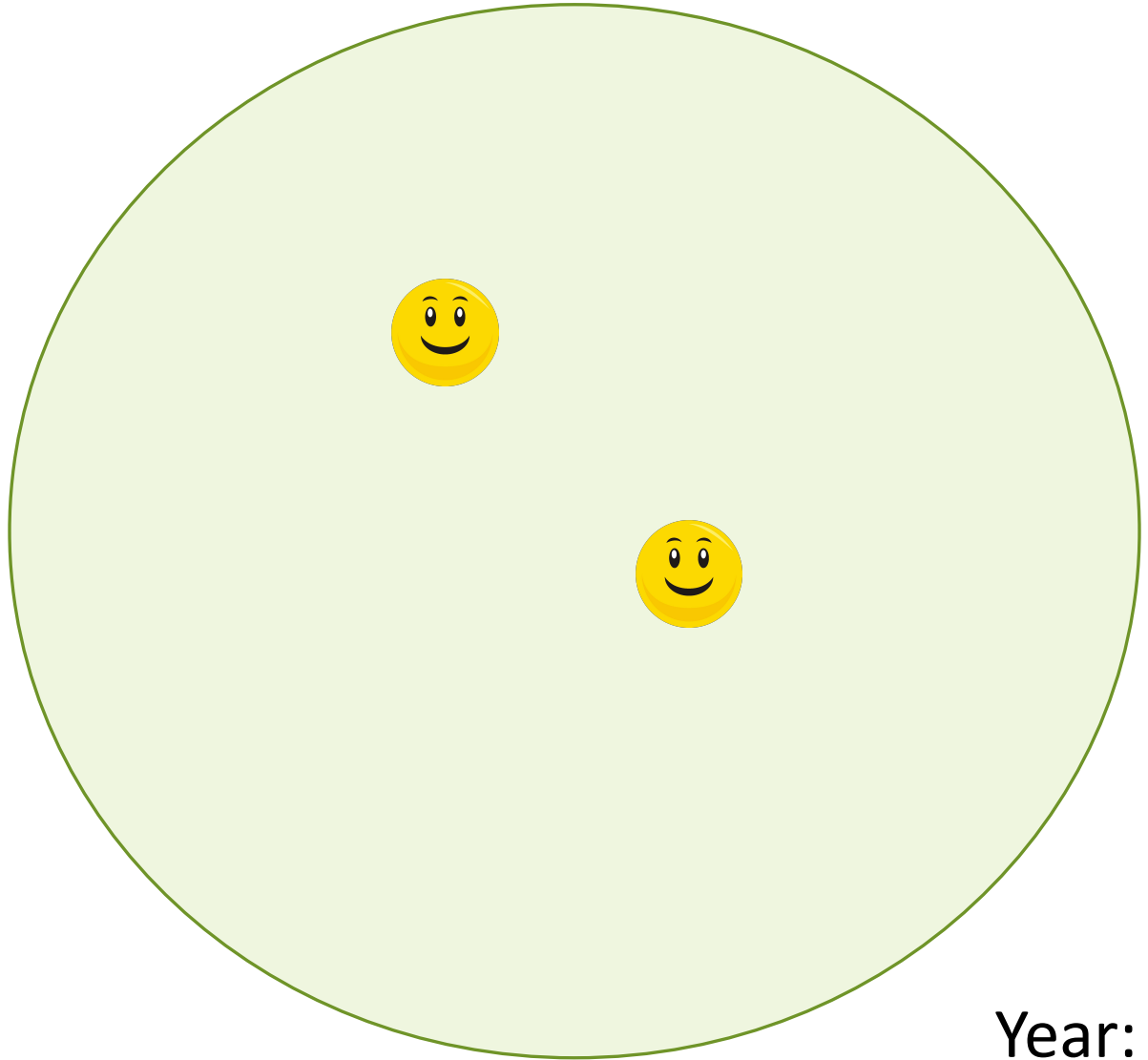
21



Year: 1630

# Population Circle

22

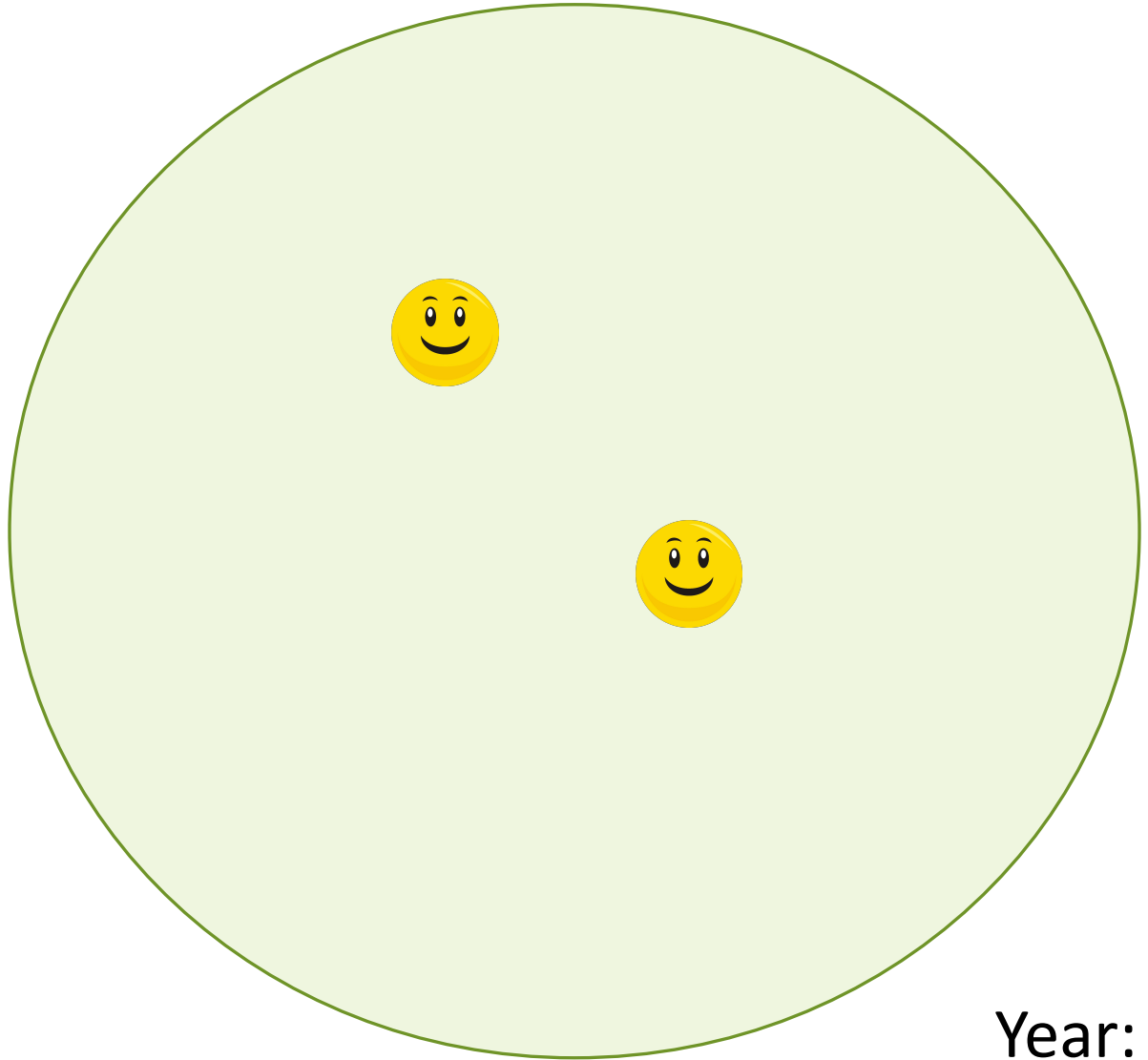


Year: 1635



# Population Circle

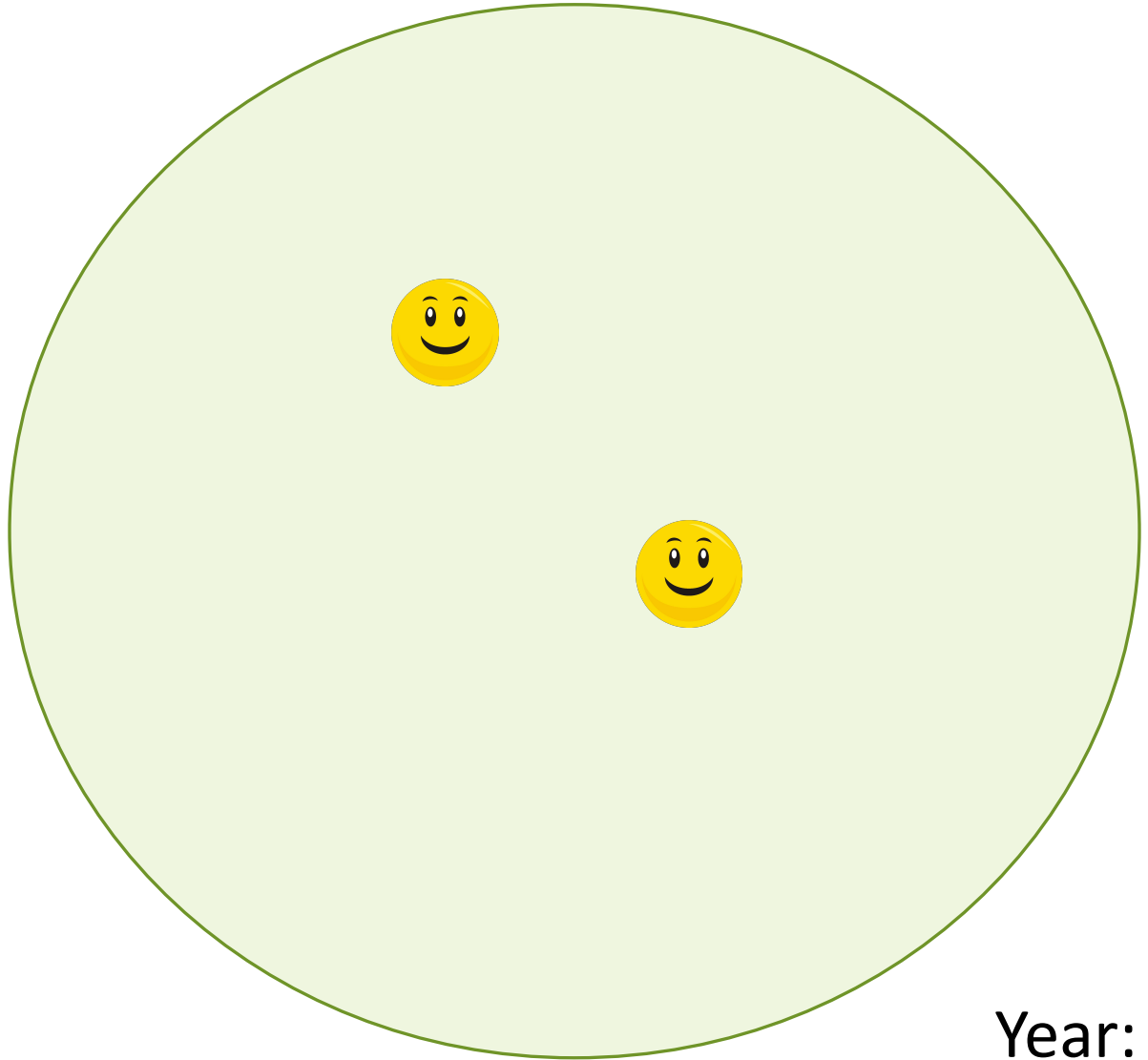
23



Year: 1640

# Population Circle

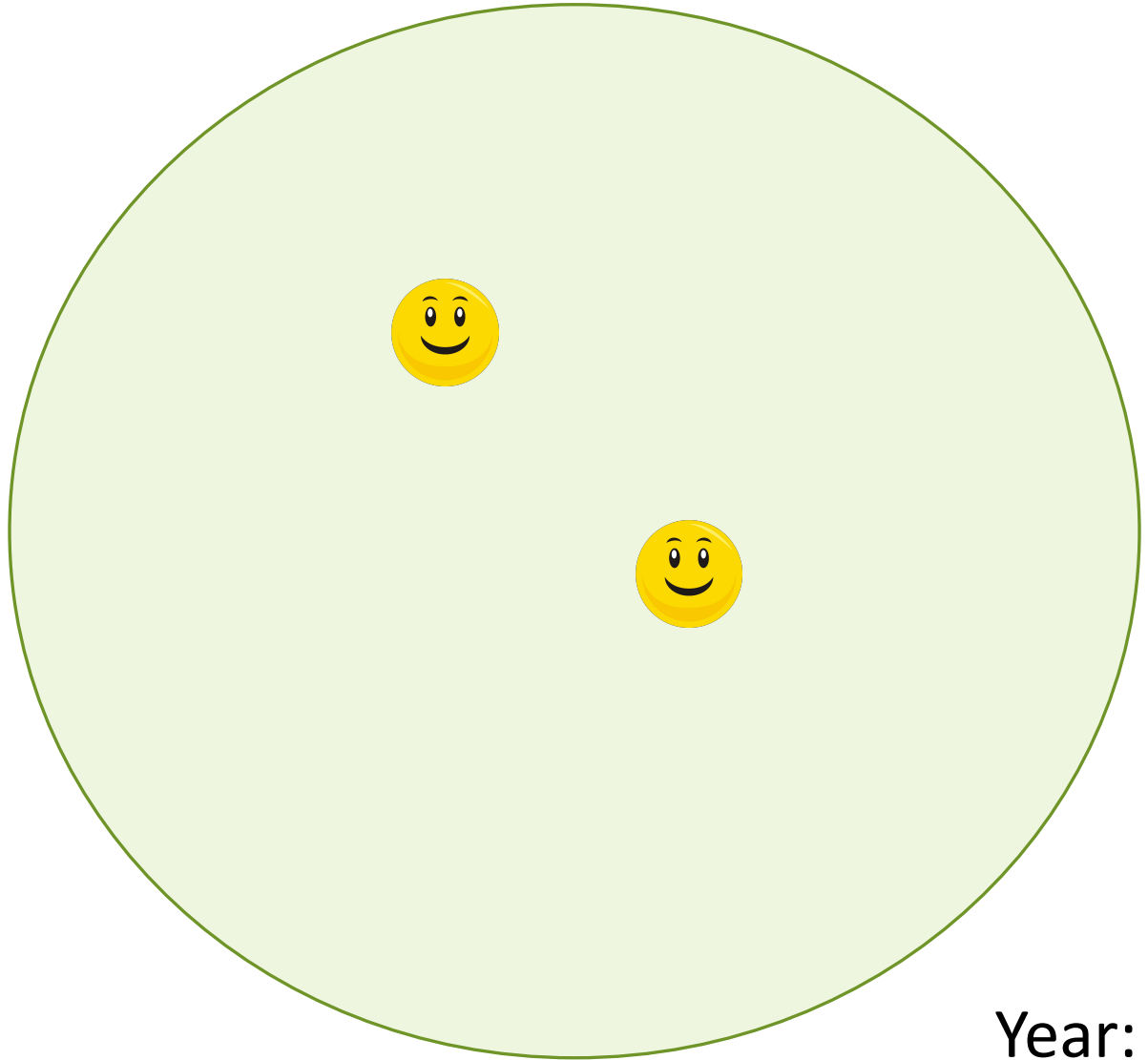
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Year: 1645

# Population Circle

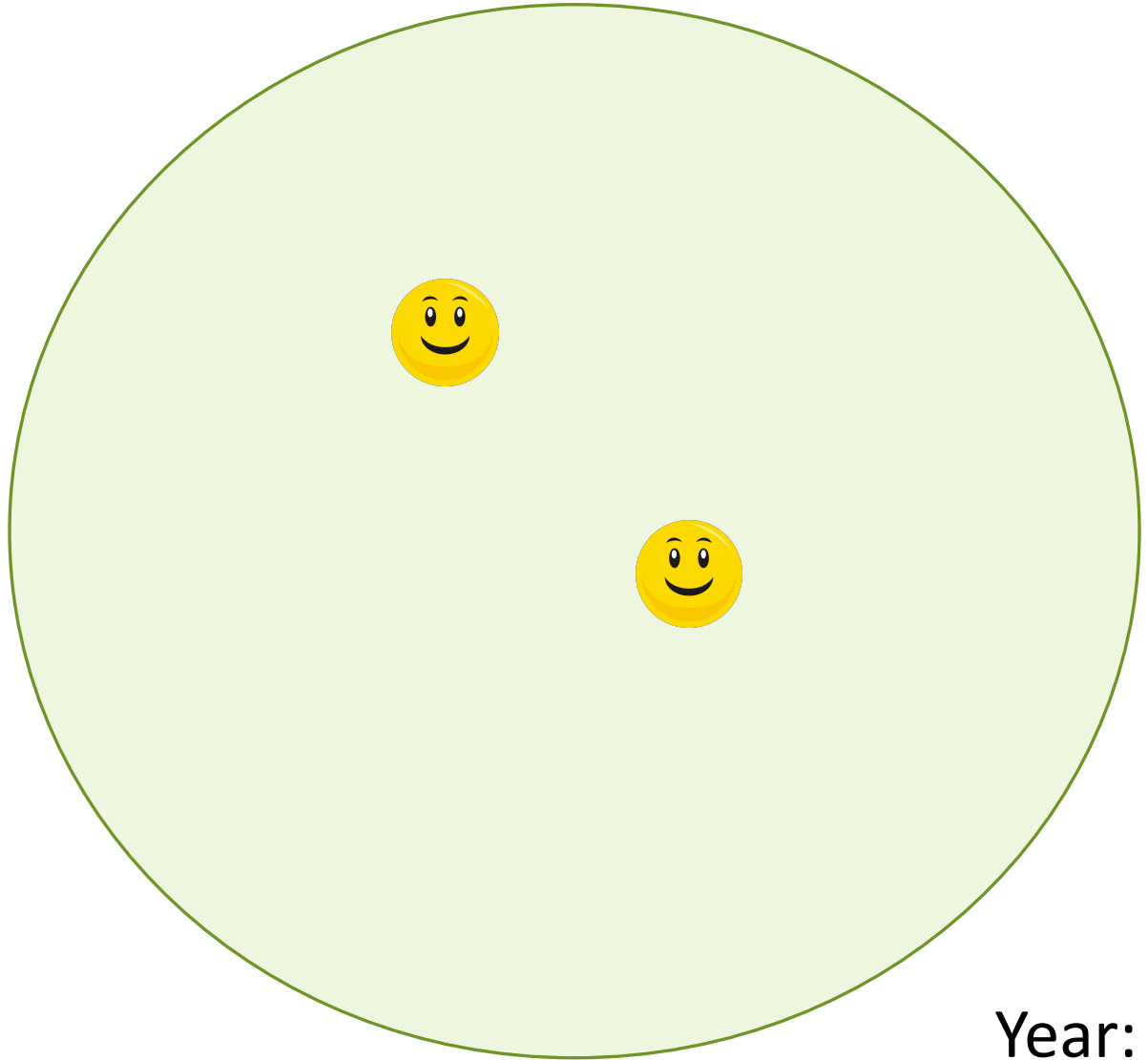
25



Year: 1650

# Population Circle

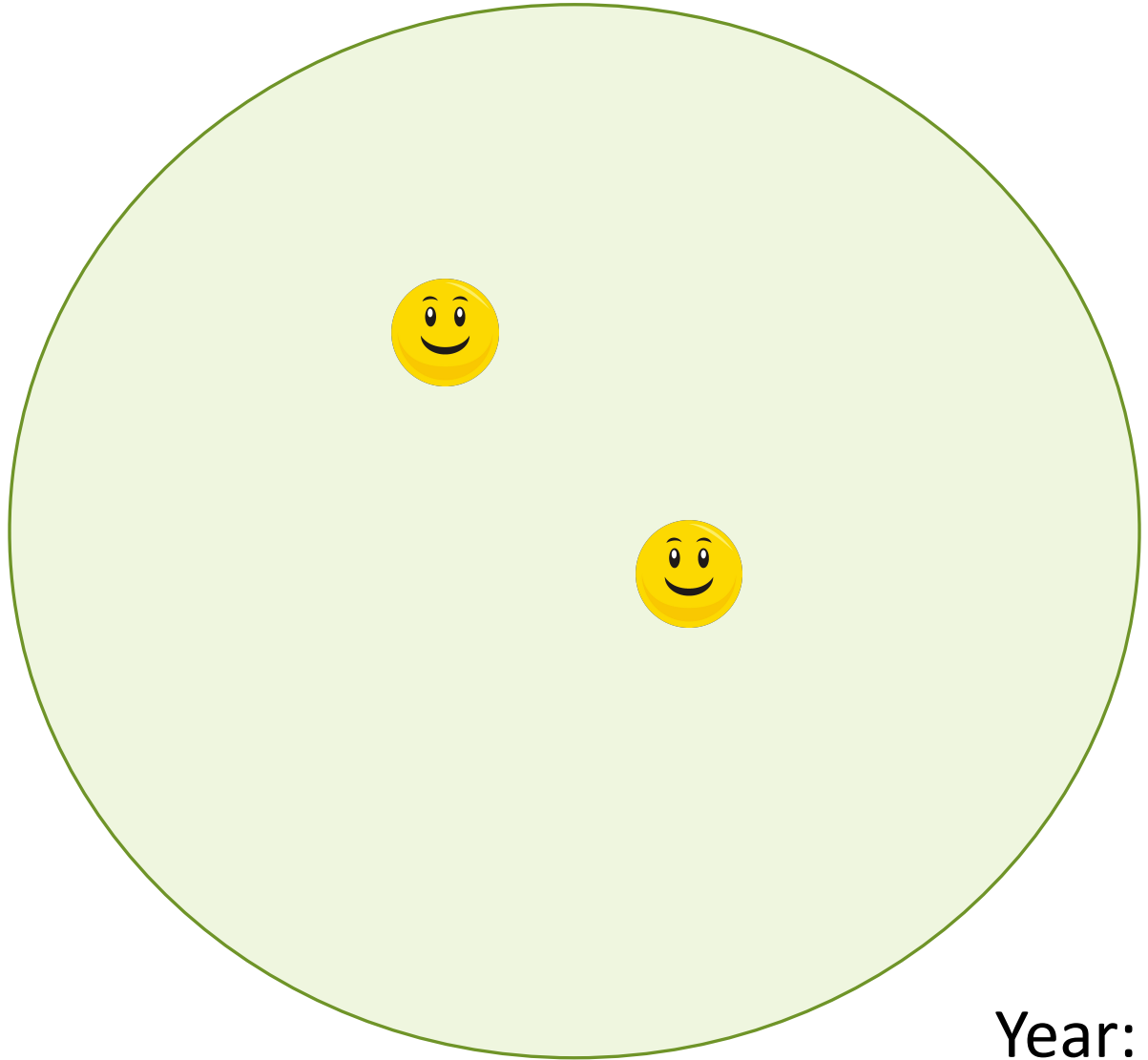
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Year: 1655

# Population Circle

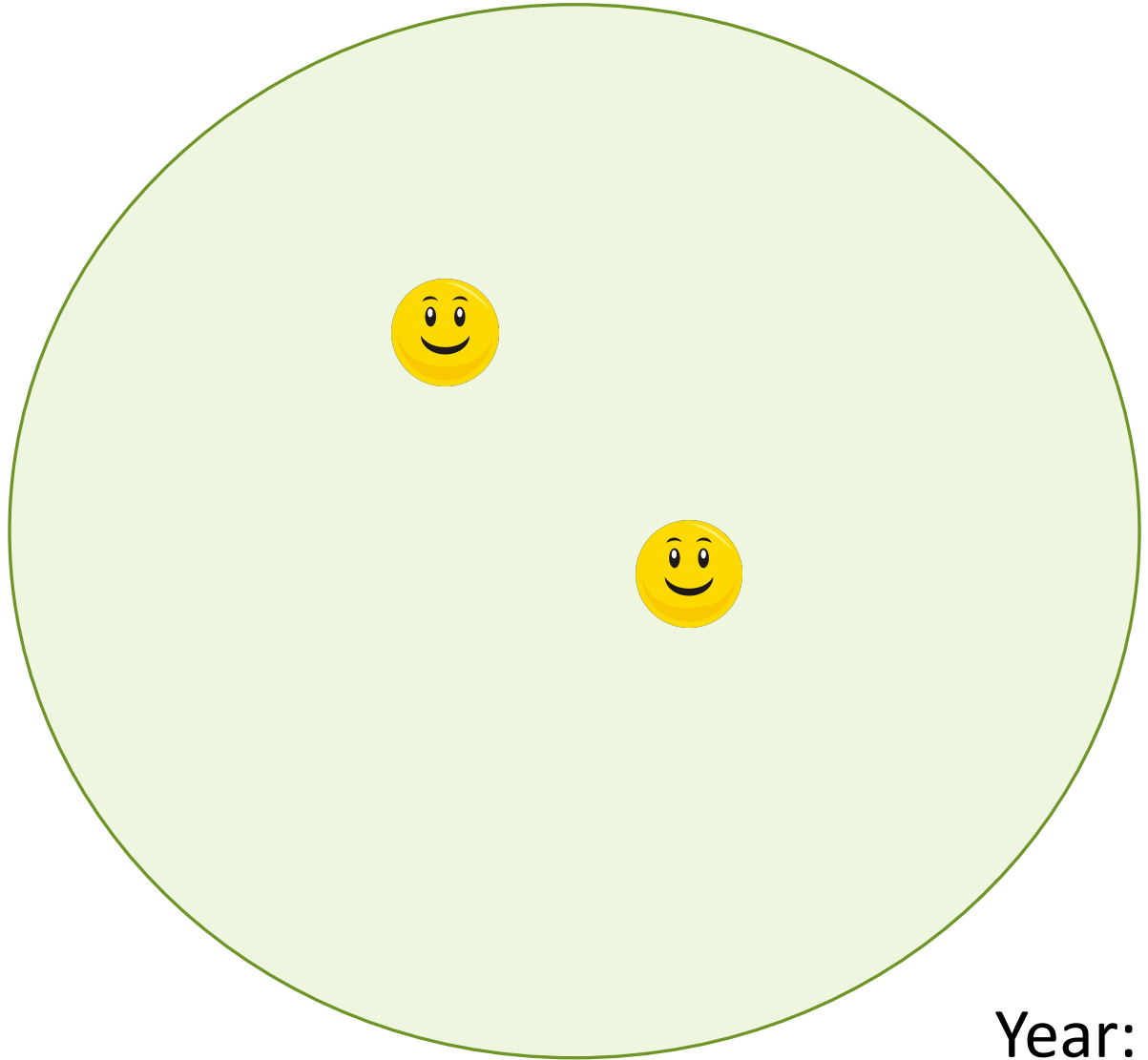
27



Year: 1660

# Population Circle

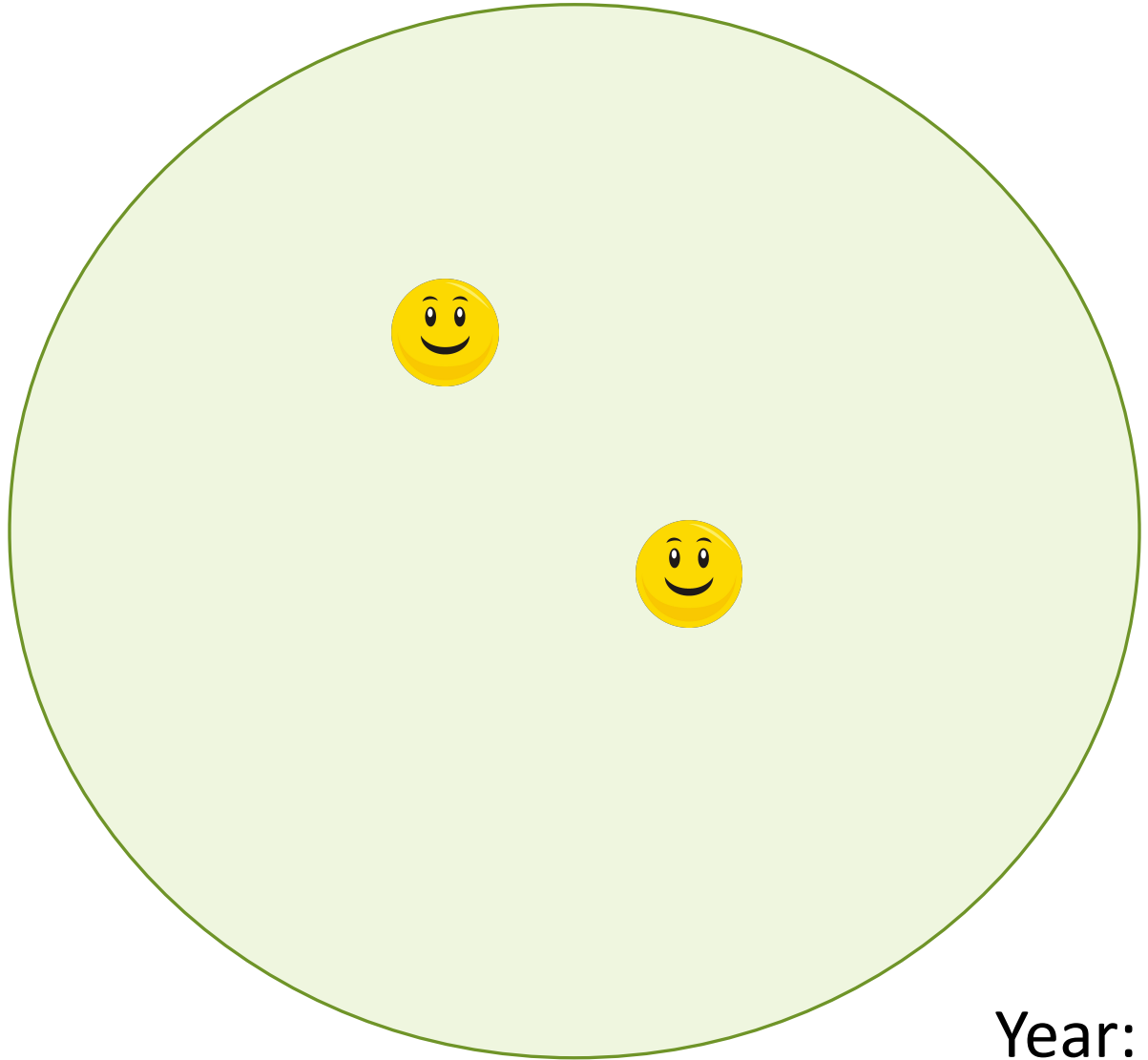
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Year: 1665

# Population Circle

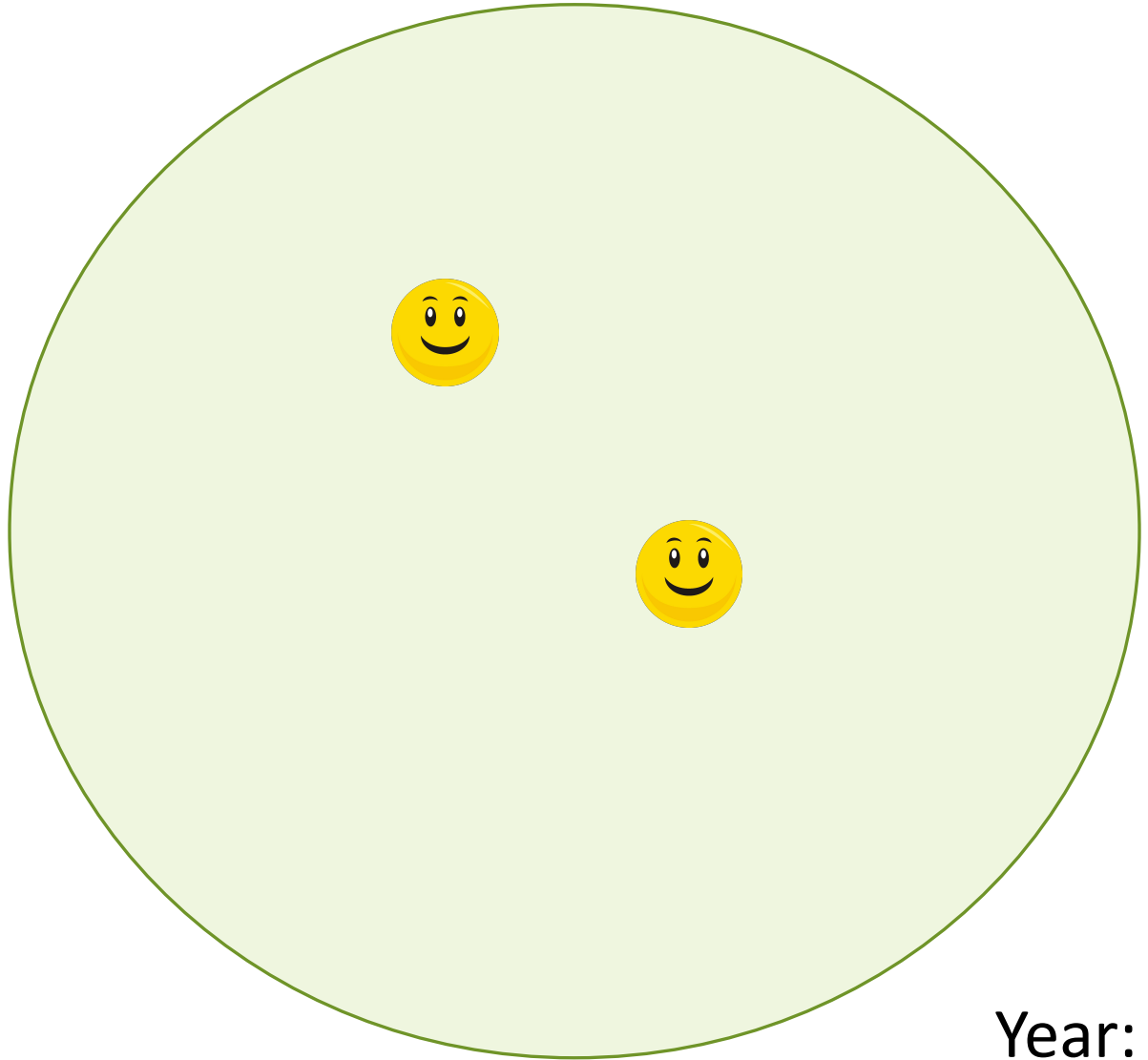
29



Year: 1670

# Population Circle

30

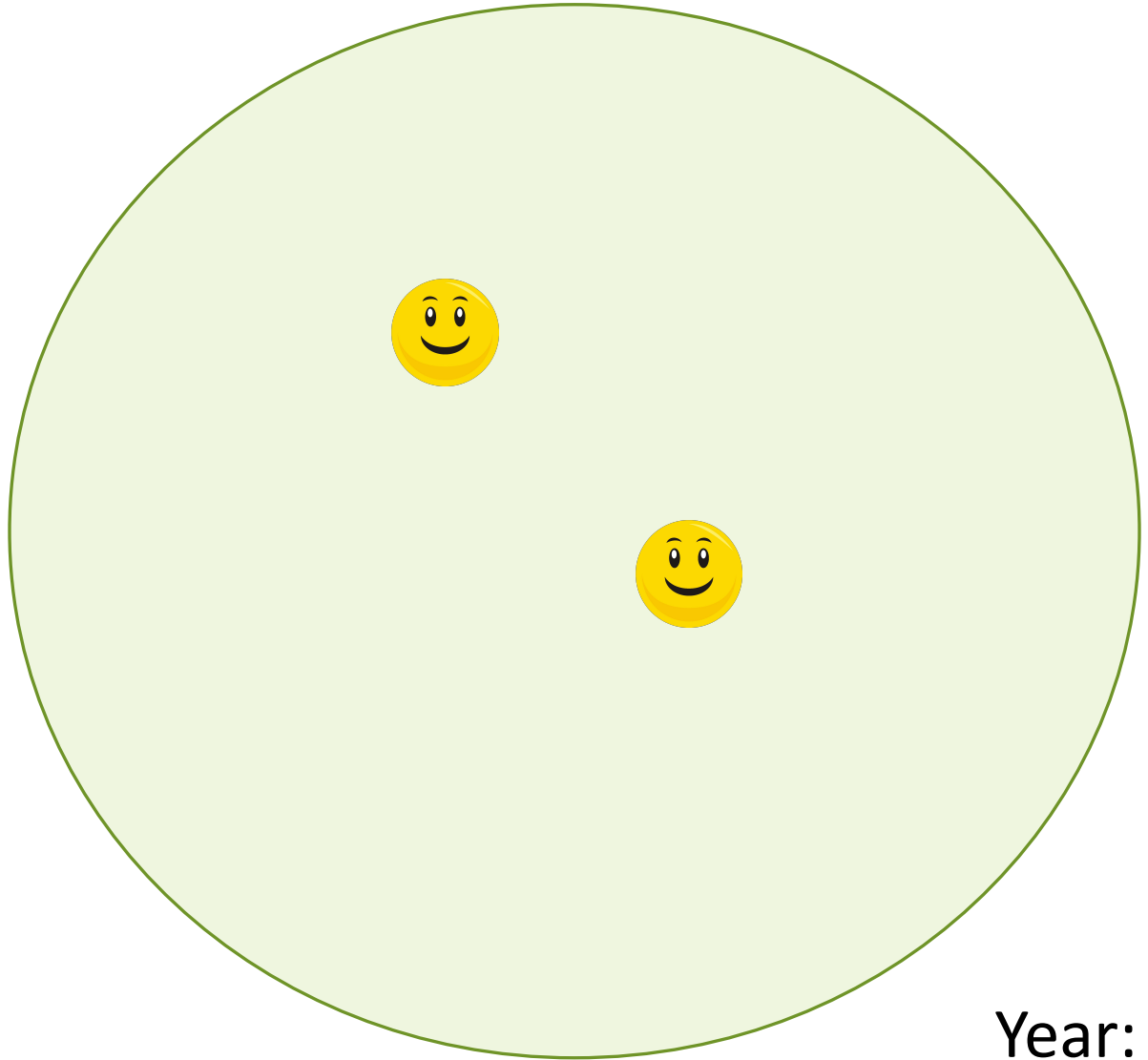


Year: 1675



# Population Circle

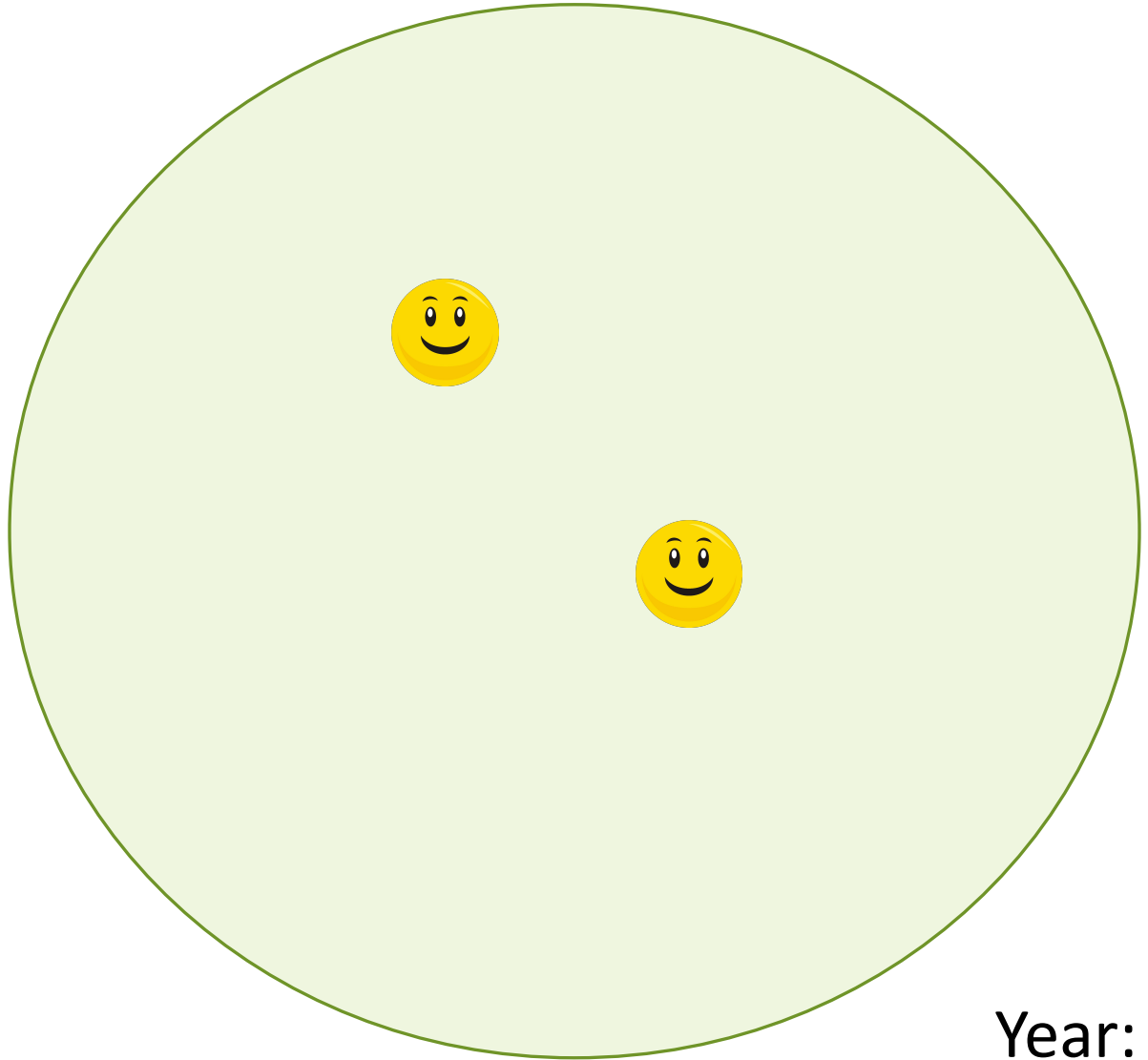
31



Year: 1680

# Population Circle

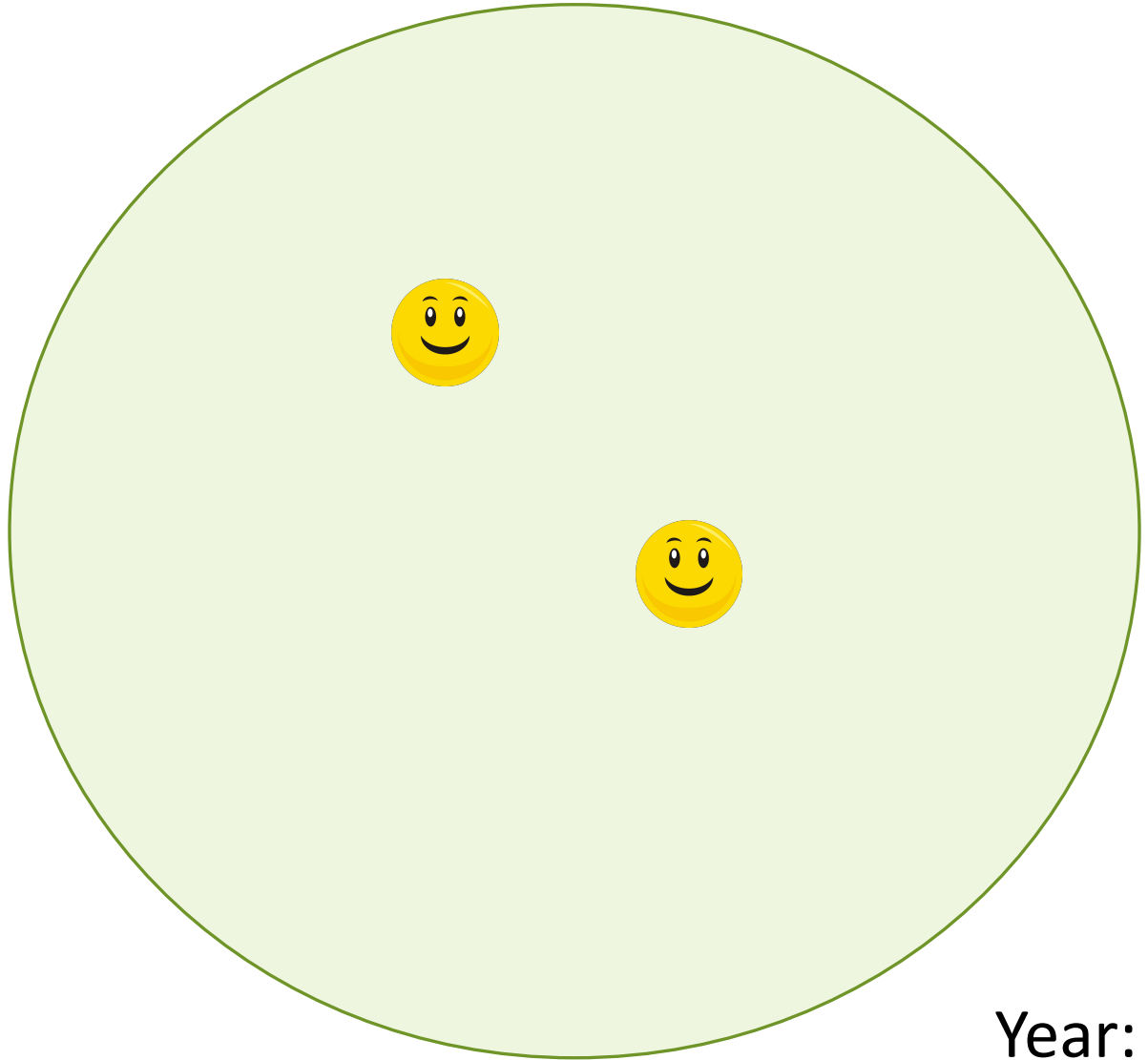
32



Year: 1685

# Population Circle

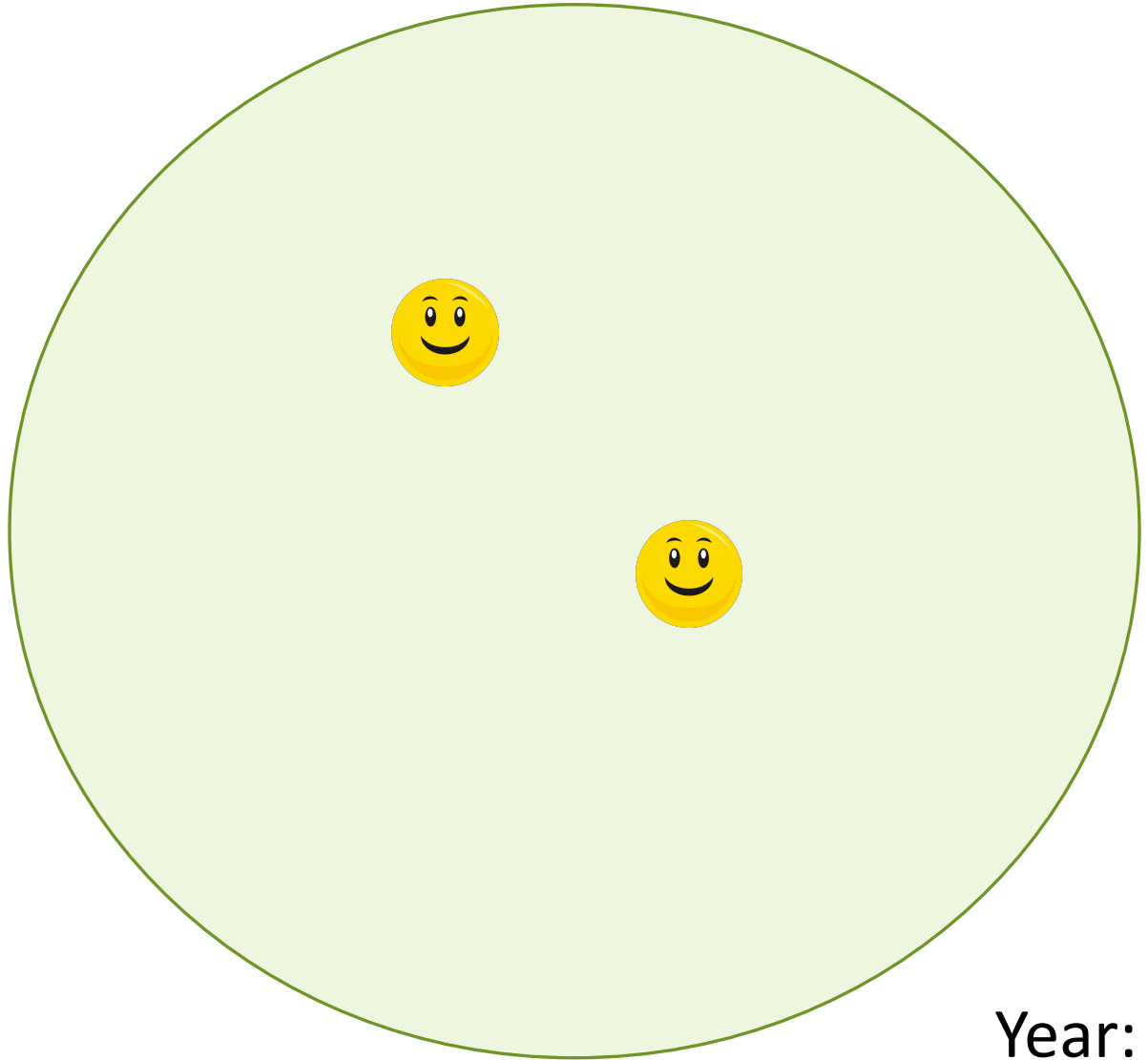
33



Year: 1690

# Population Circle

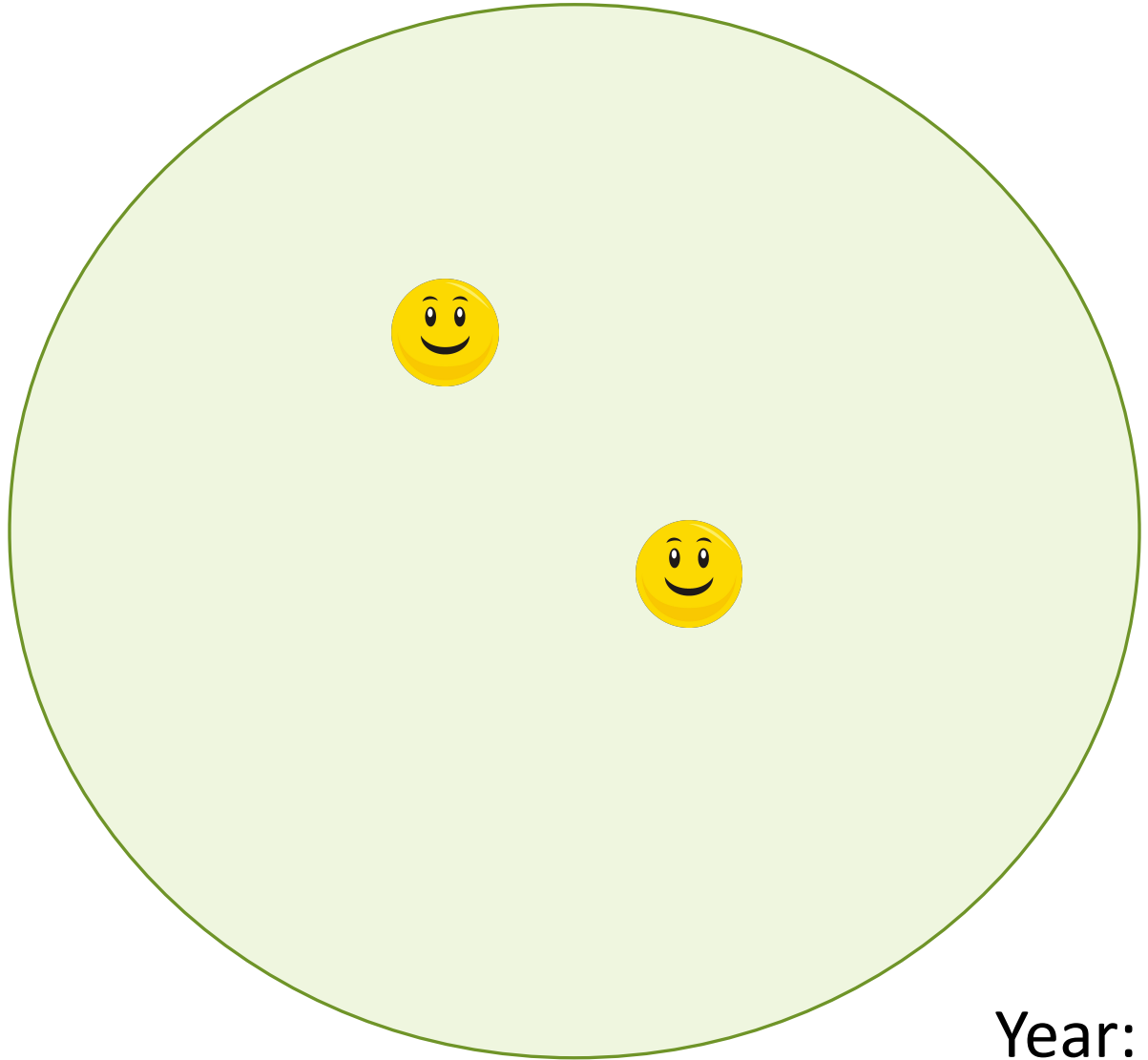
34



Year: 1695

# Population Circle

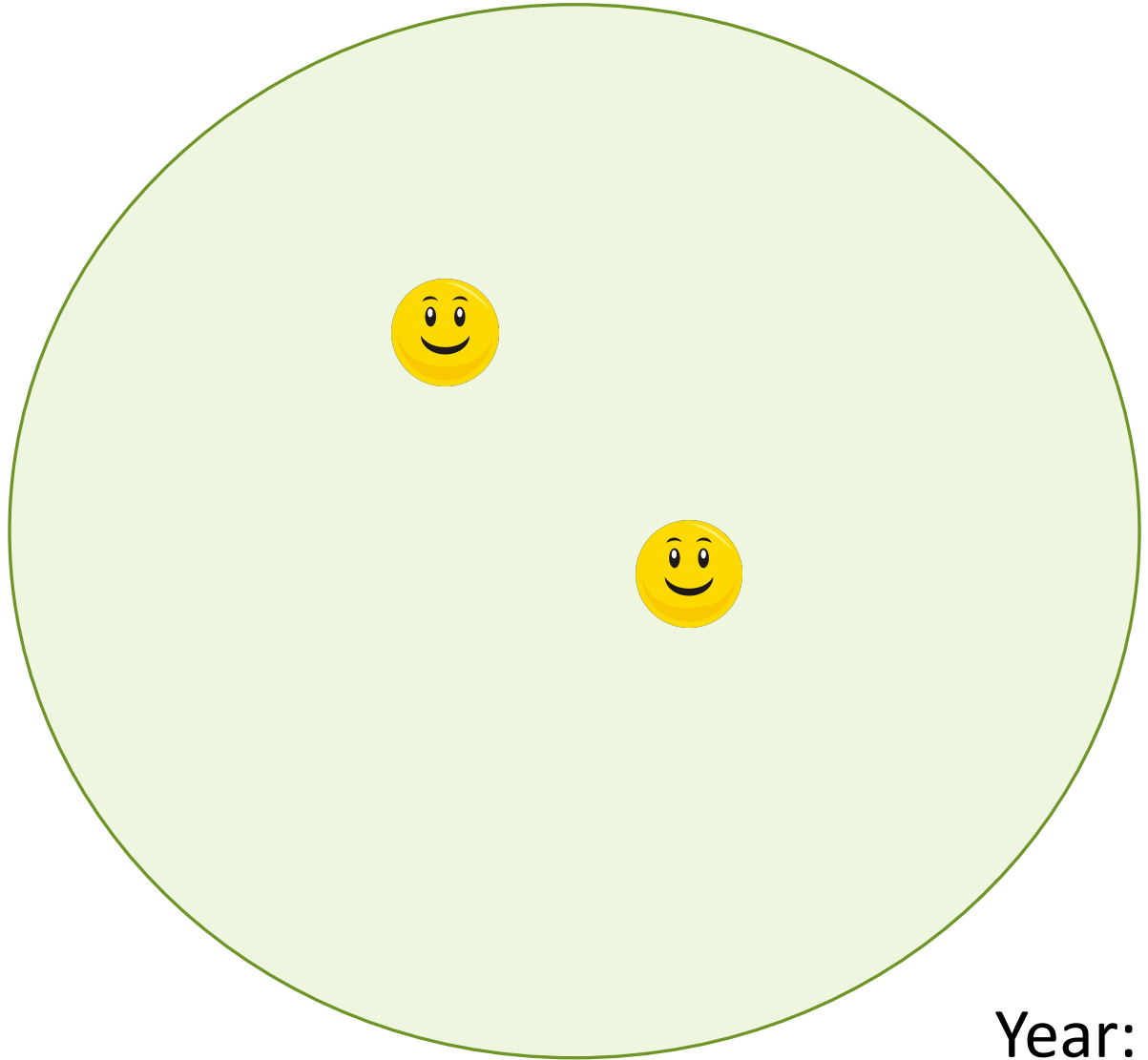
35



Year: 1700

# Population Circle

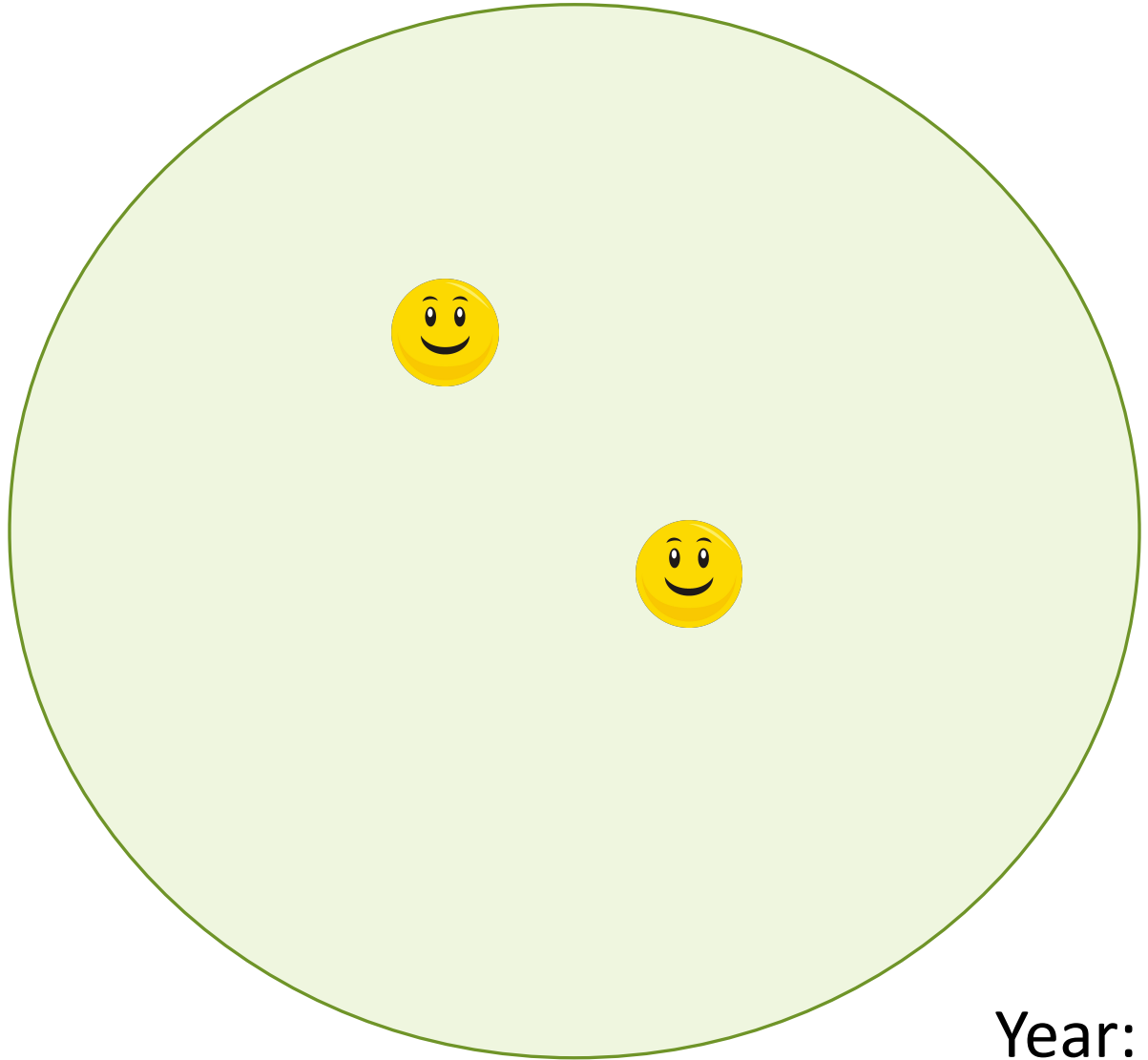
36



Year: 1705

# Population Circle

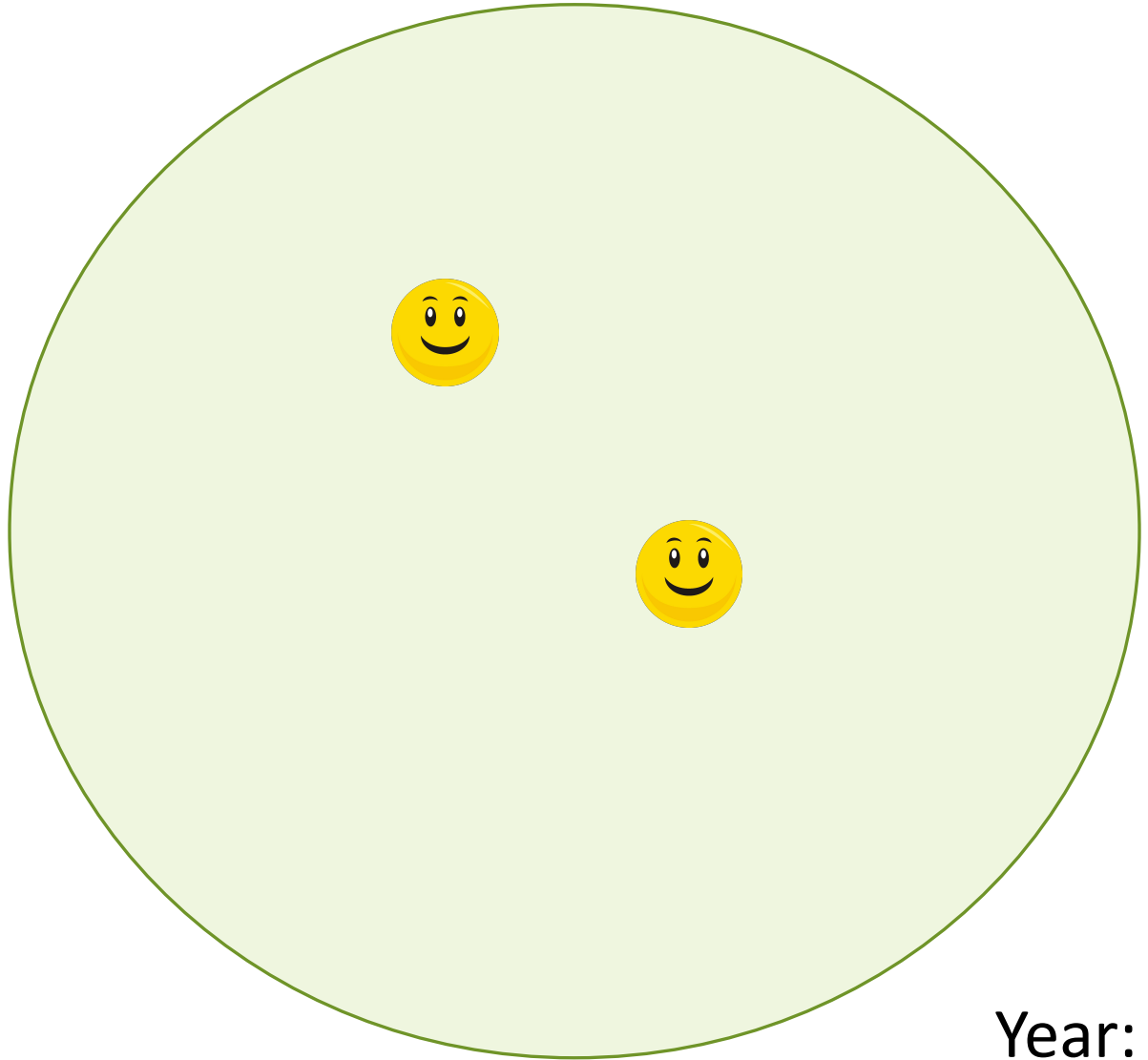
37



Year: 1710

# Population Circle

38

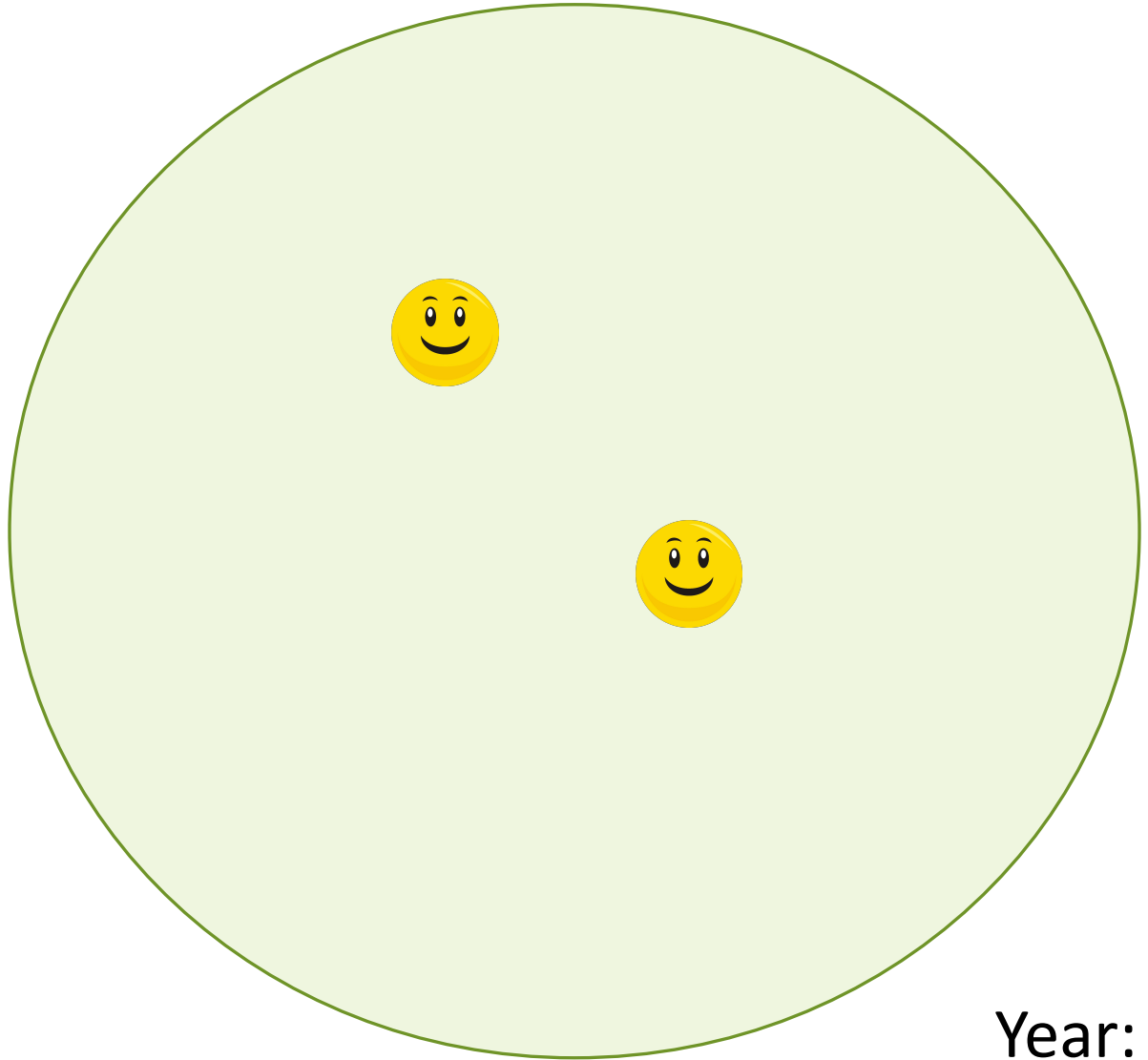


Year: 1715



# Population Circle

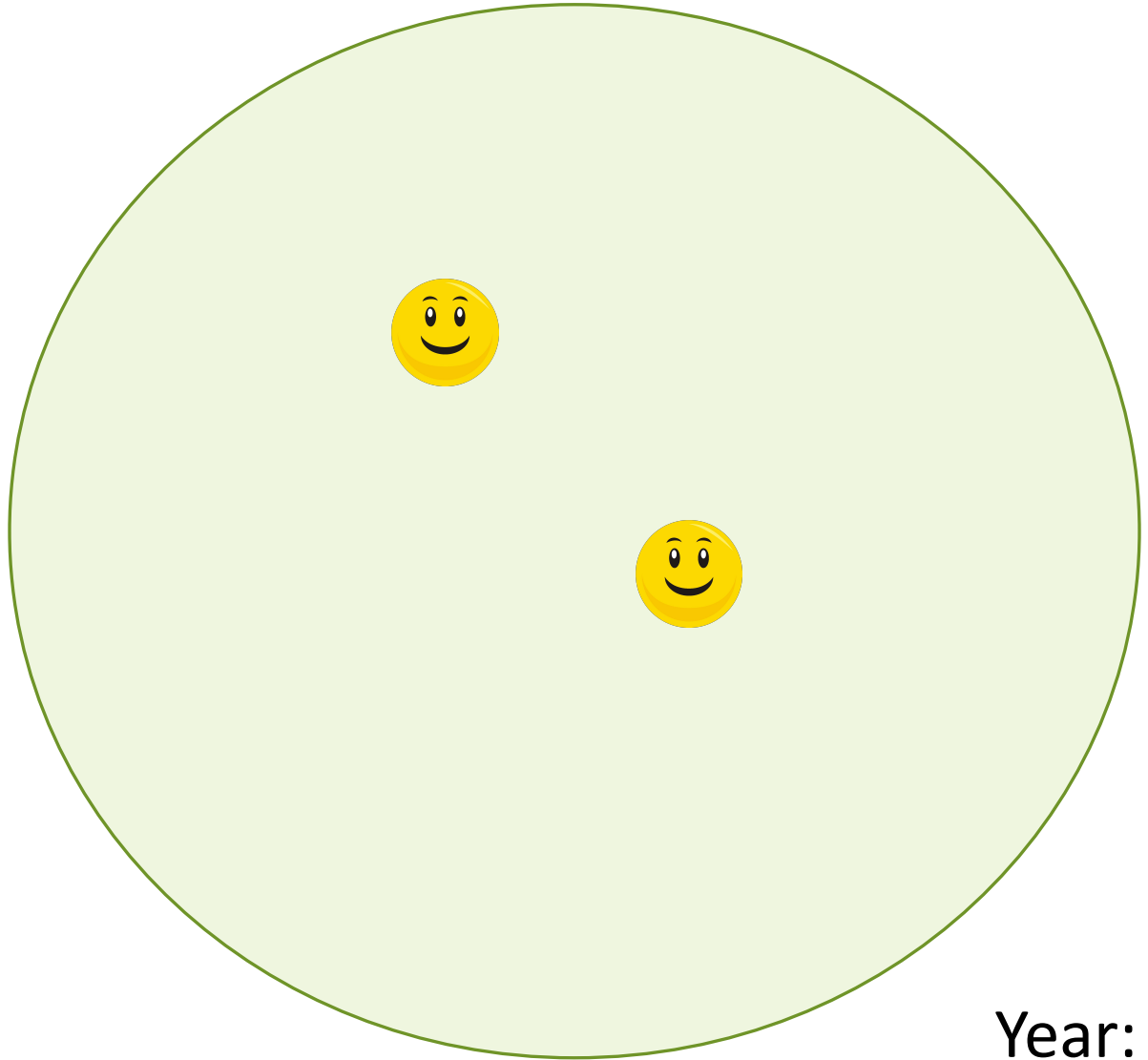
39



Year: 1720

# Population Circle

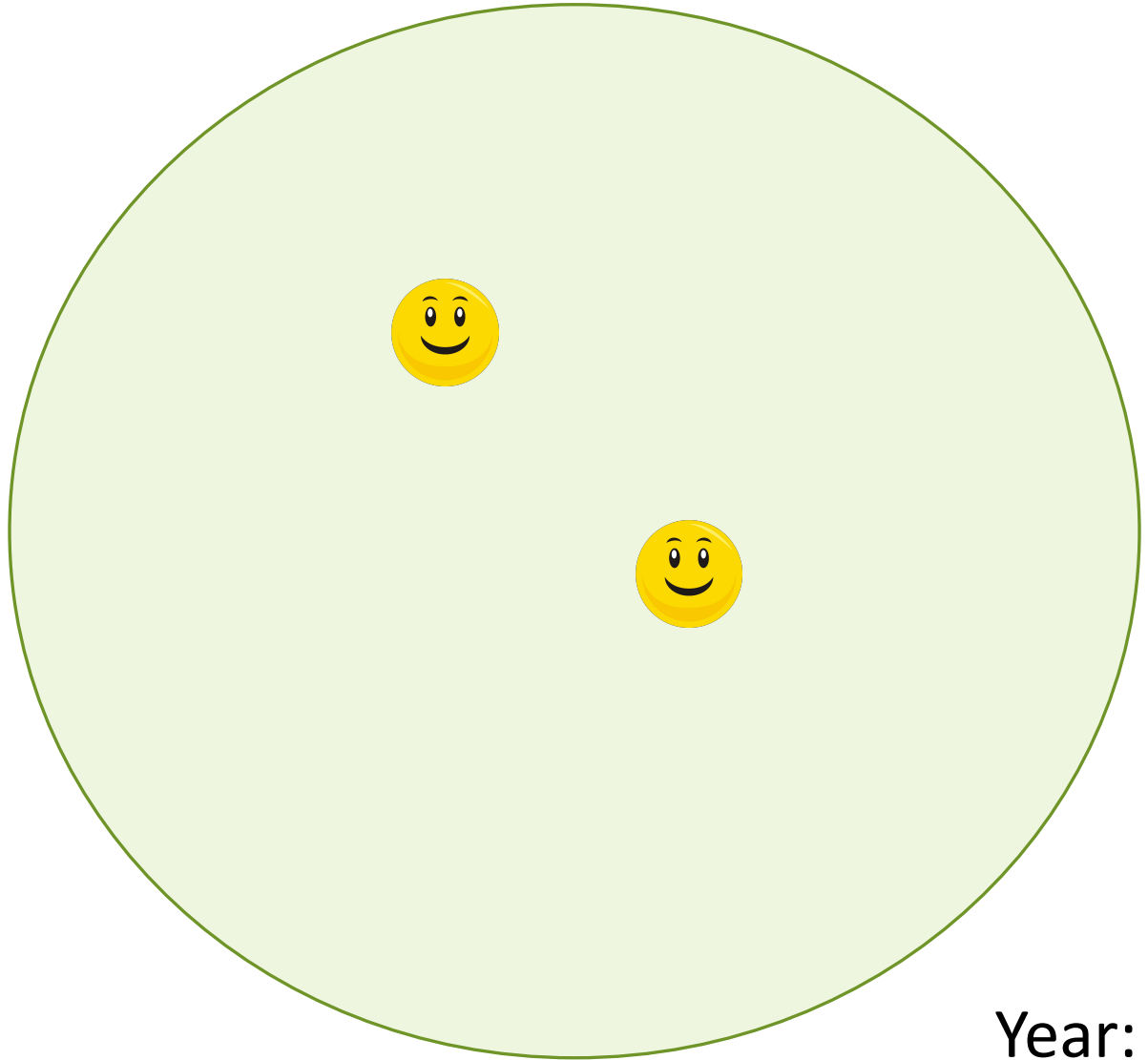
40



Year: 1725

# Population Circle

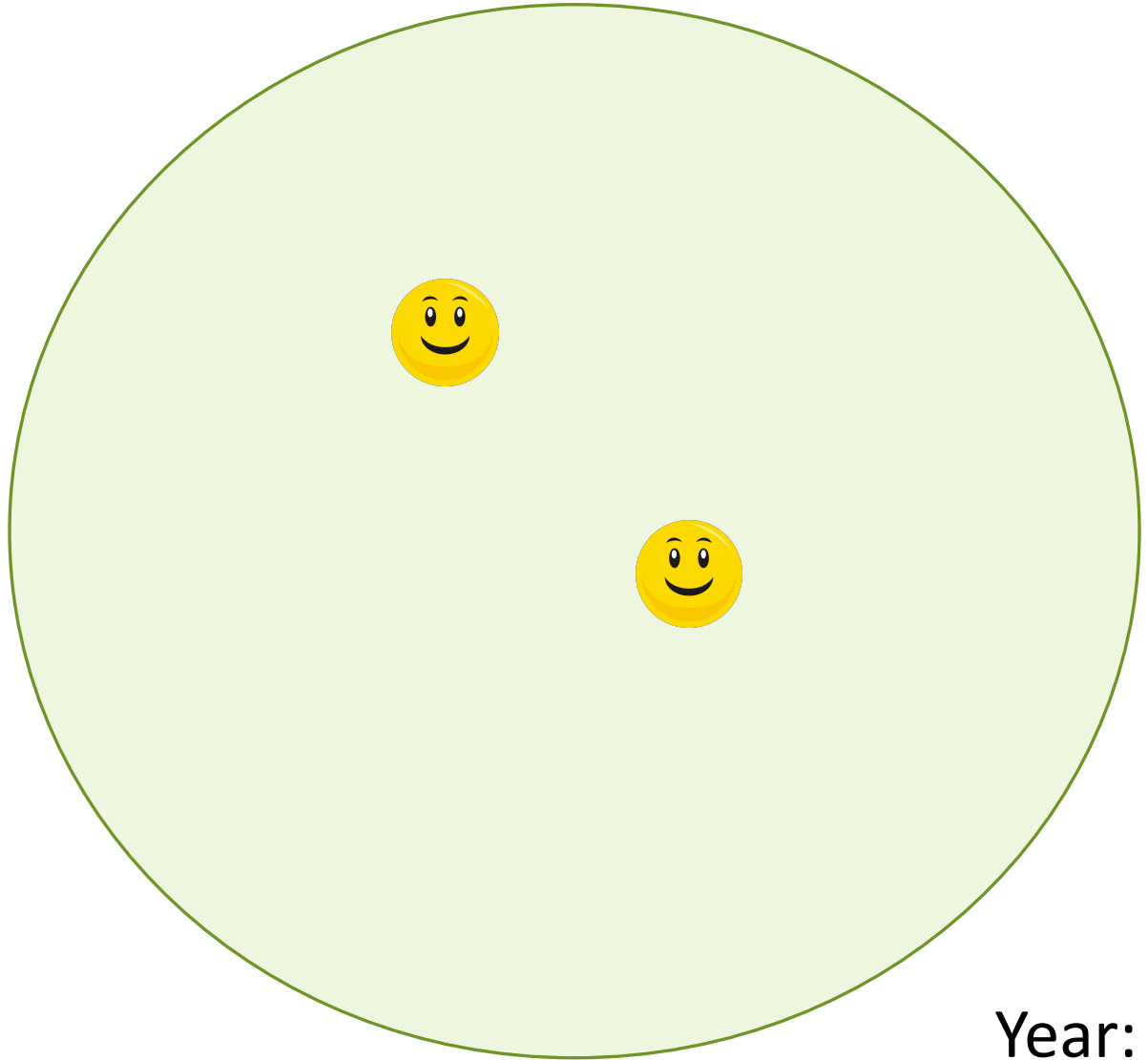
41



Year: 1730

# Population Circle

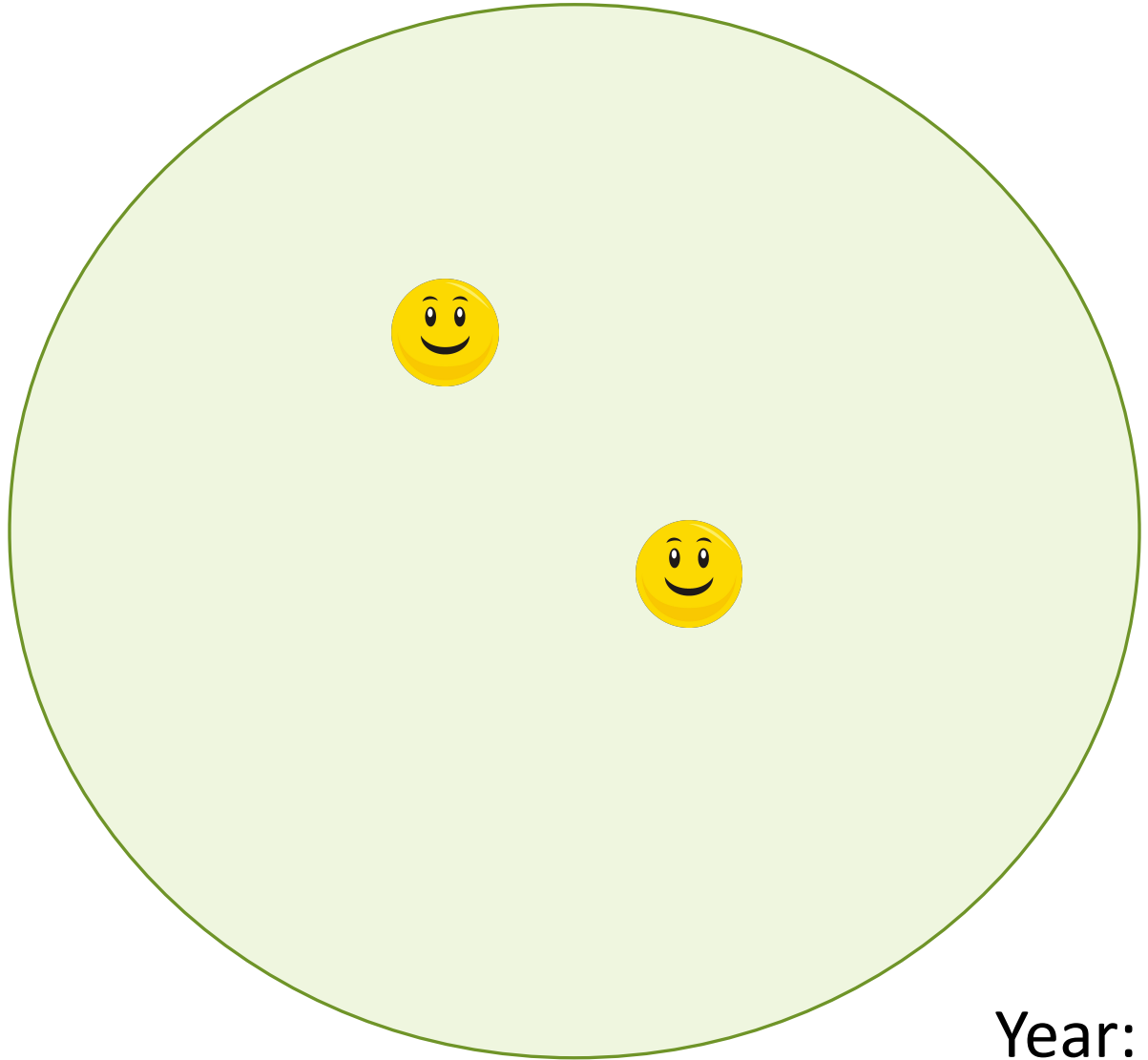
42



Year: 1735

# Population Circle

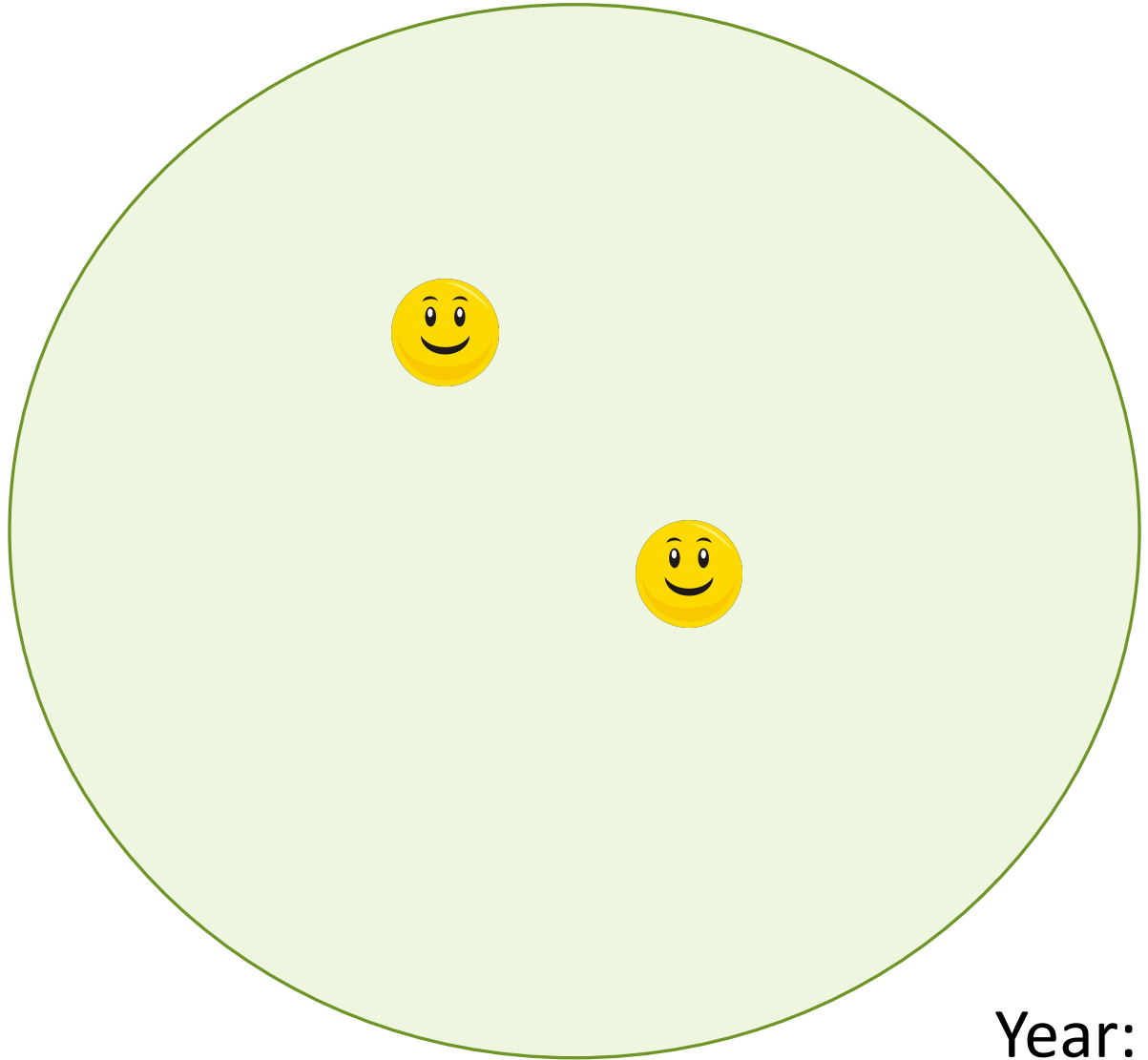
43



Year: 1740

# Population Circle

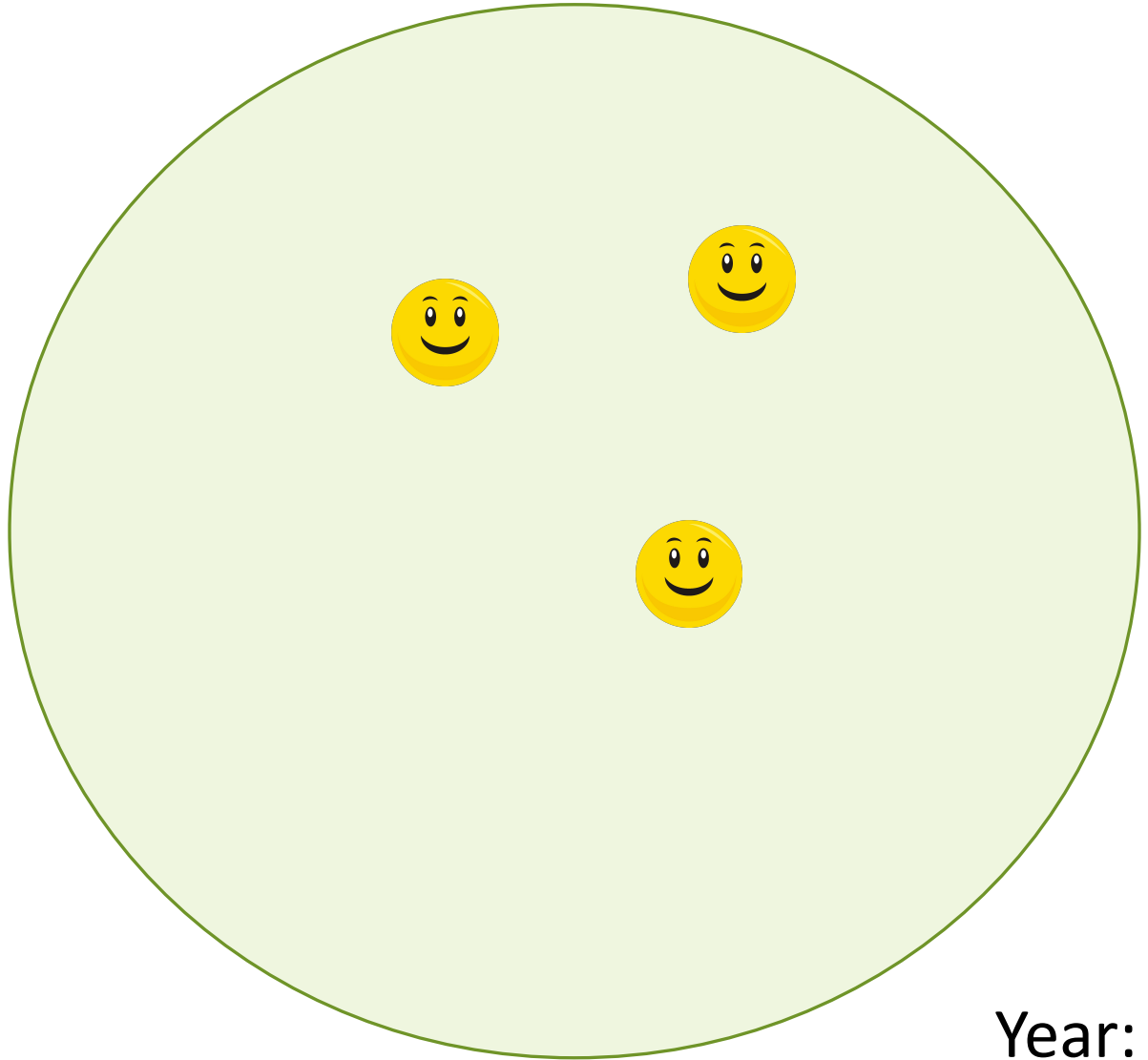
44



Year: 1745

# Population Circle

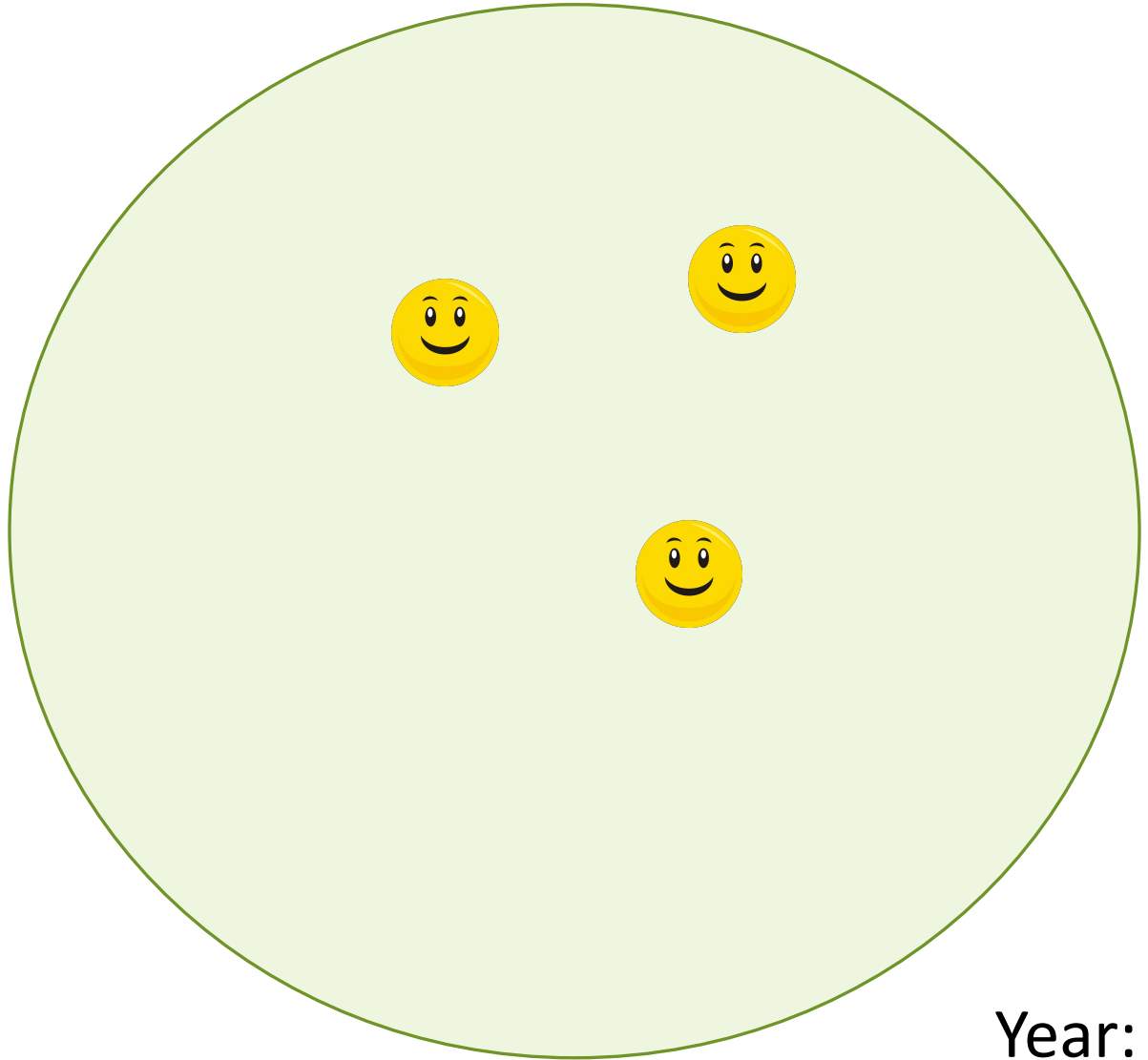
45



Year: 1750

# Population Circle

46

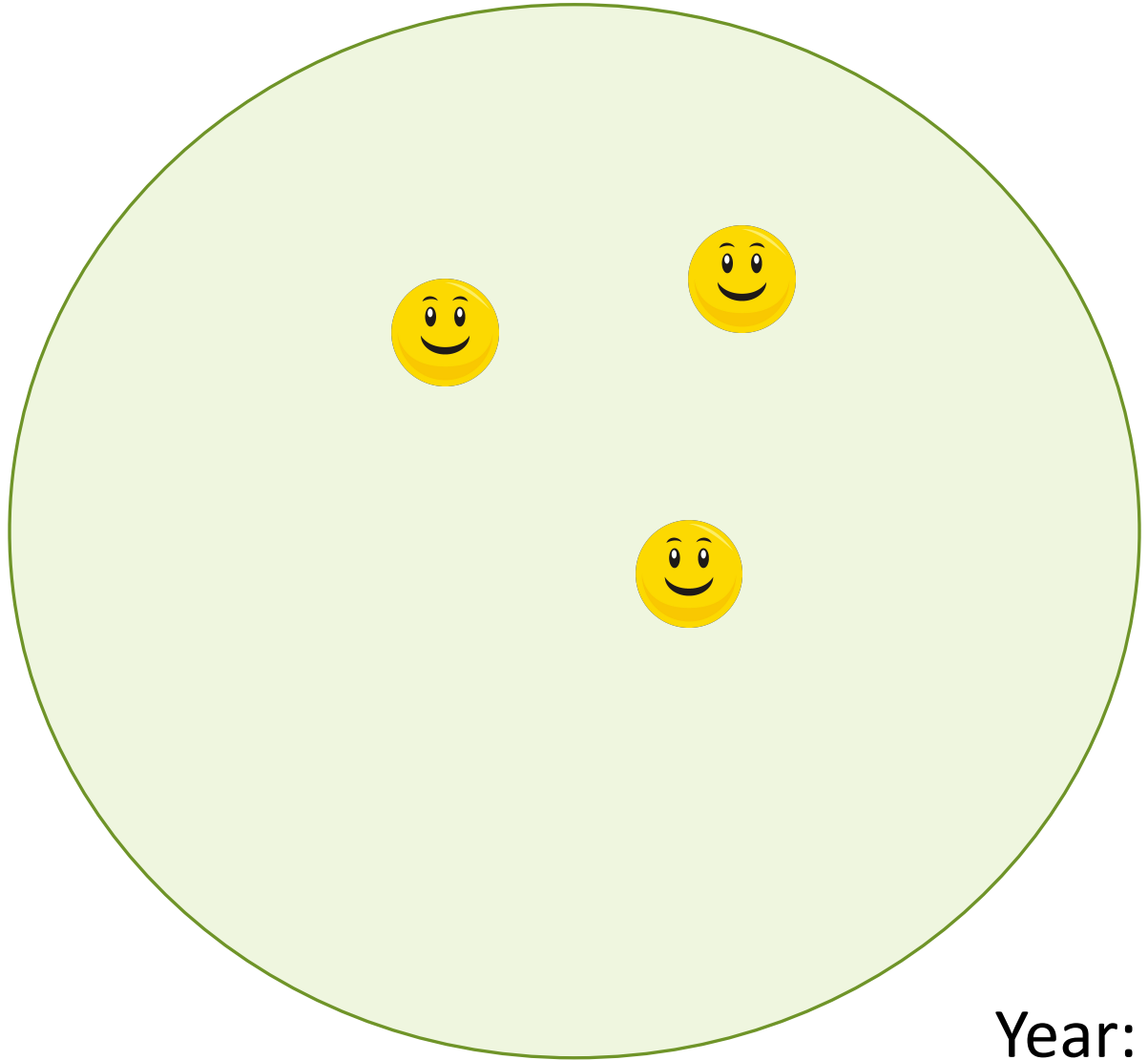


Year: 1755



# Population Circle

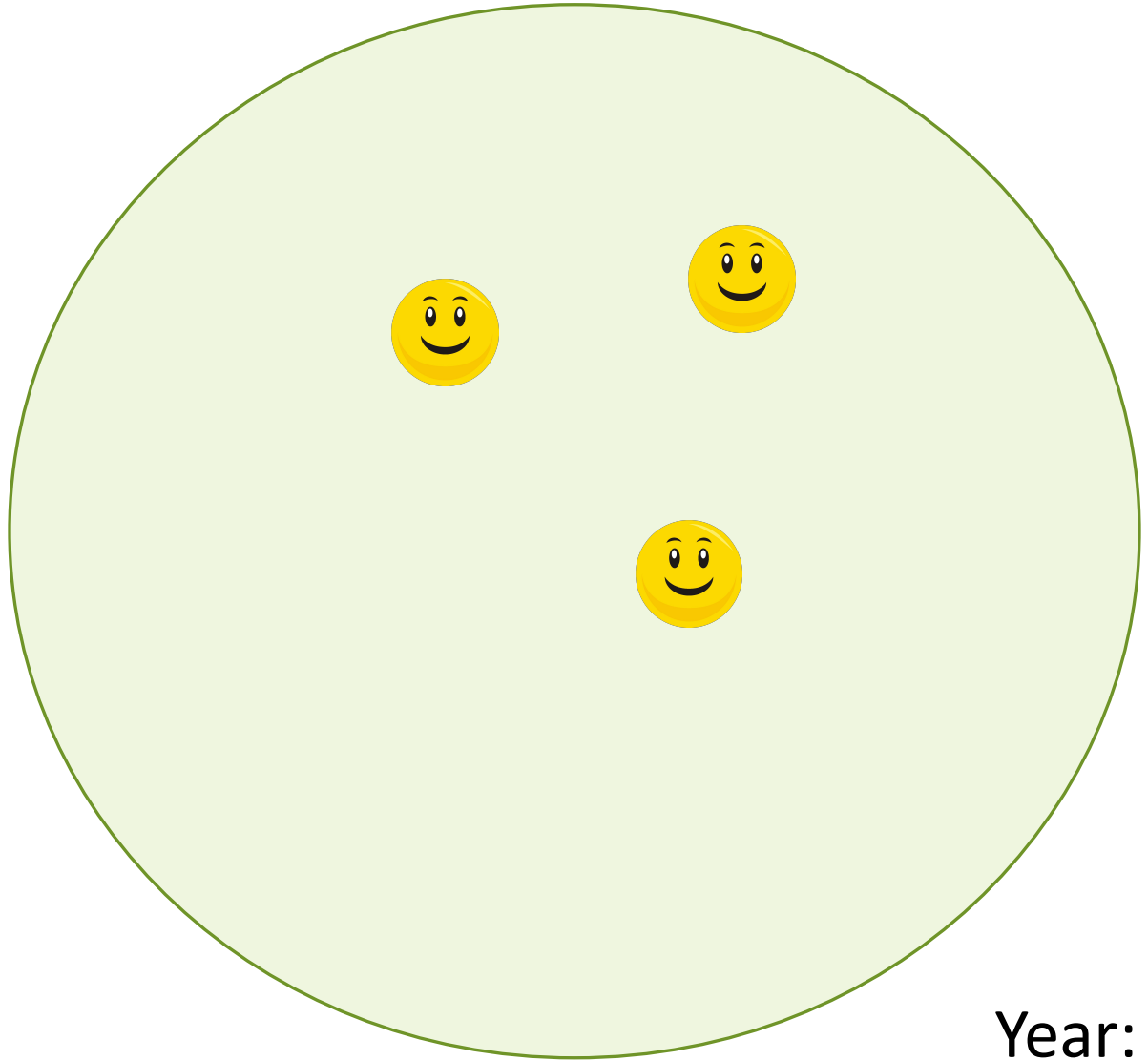
47



Year: 1760

# Population Circle

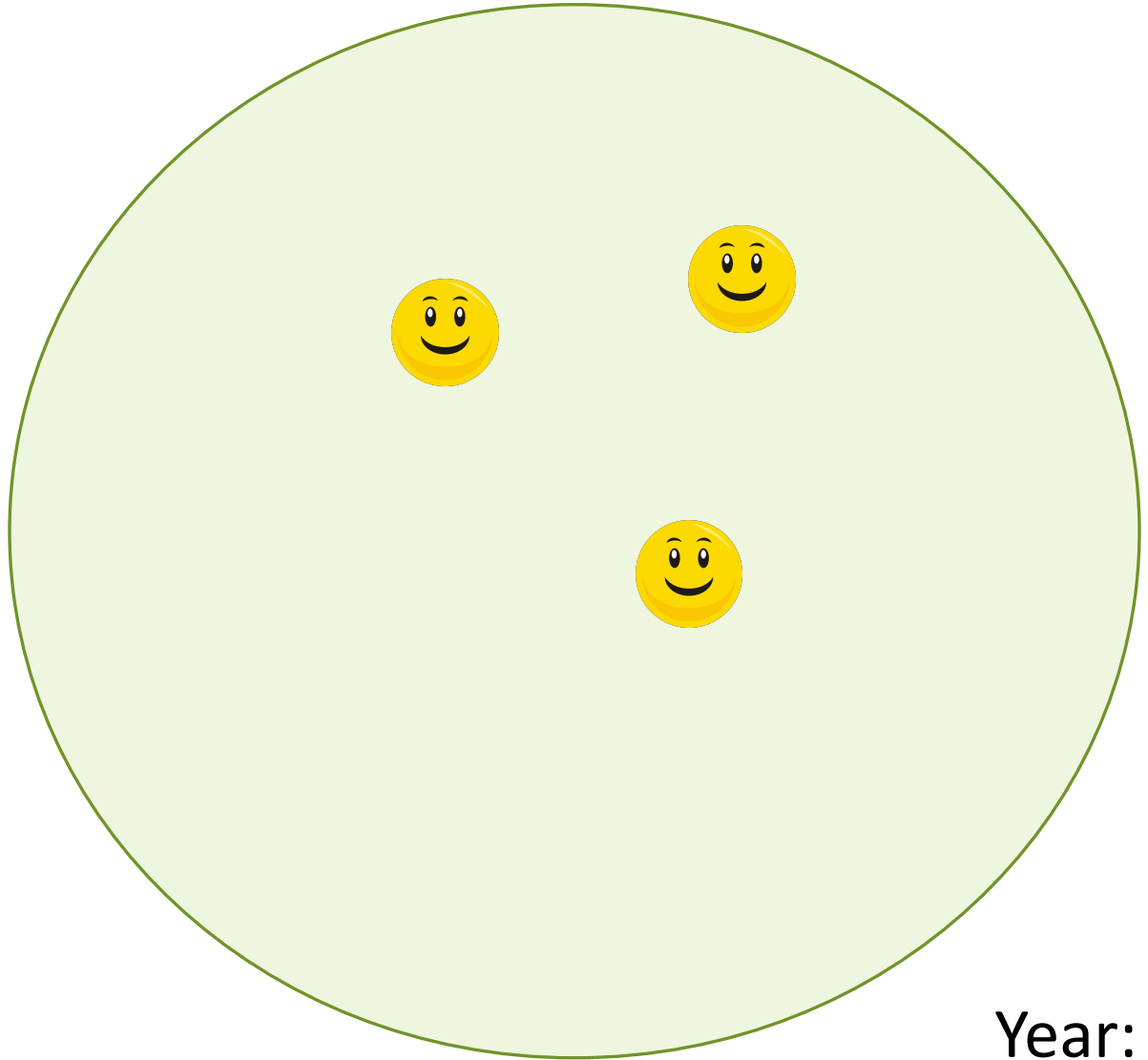
48



Year: 1765

# Population Circle

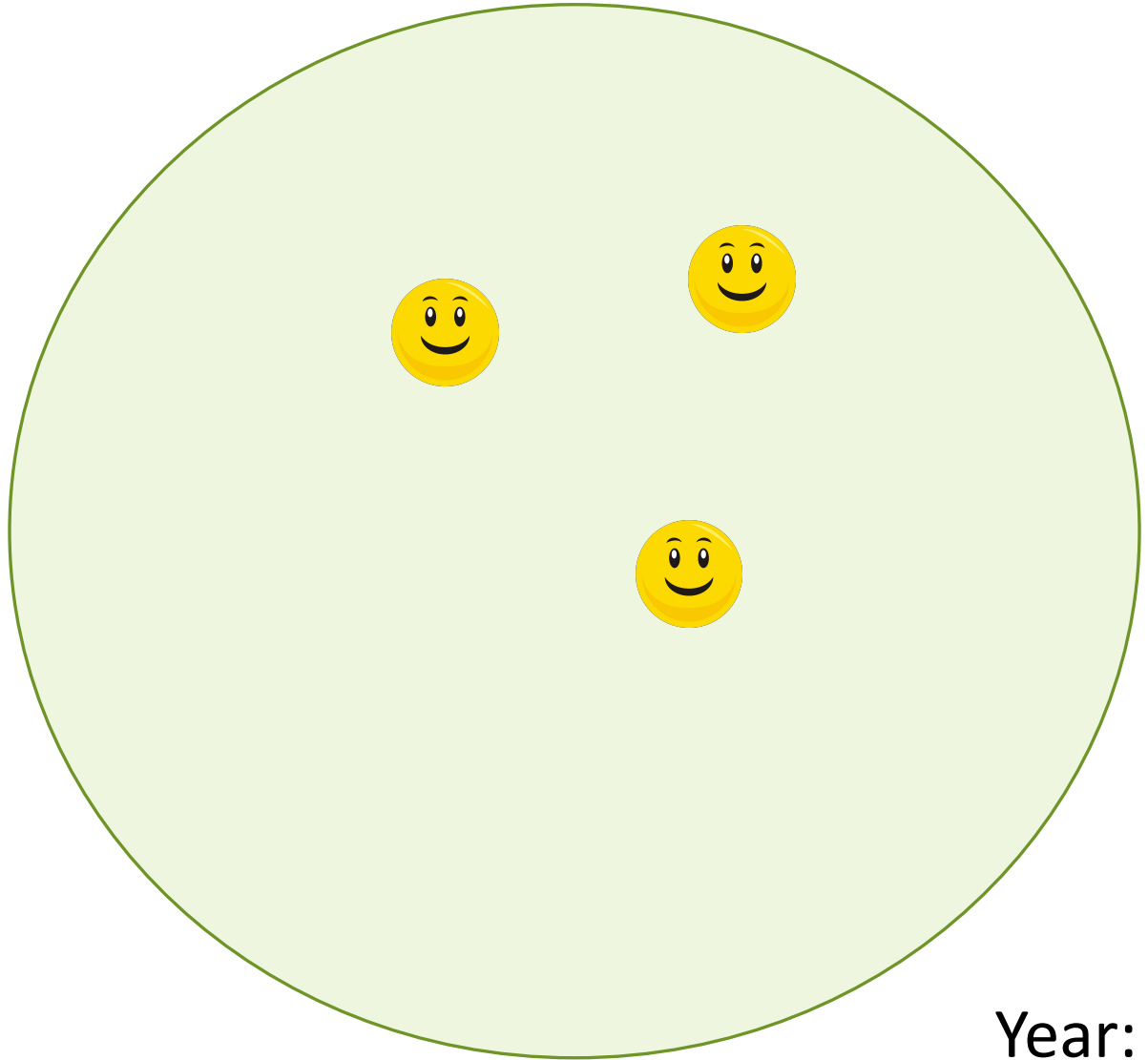
49



Year: 1770

# Population Circle

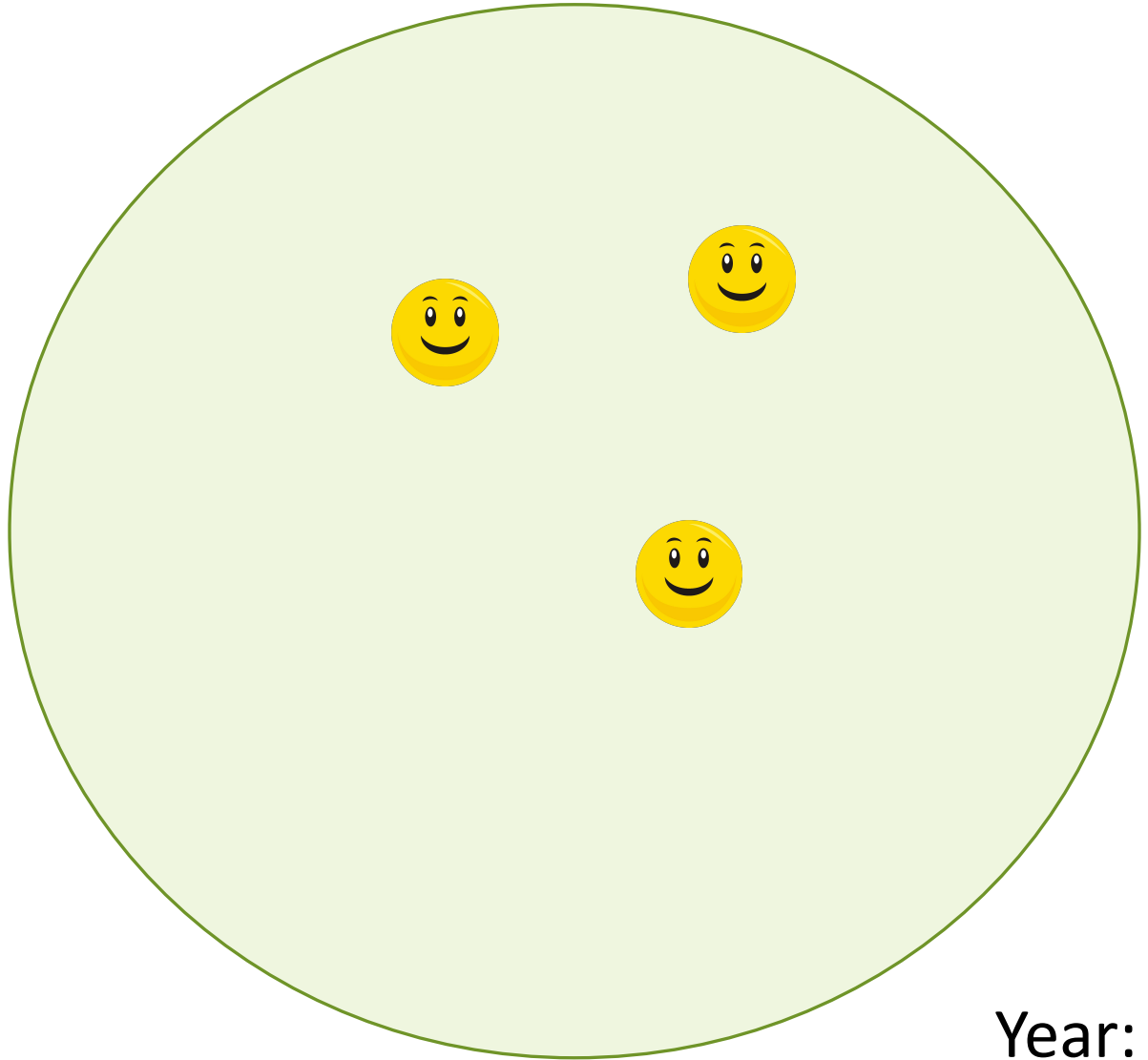
50



Year: 1775

# Population Circle

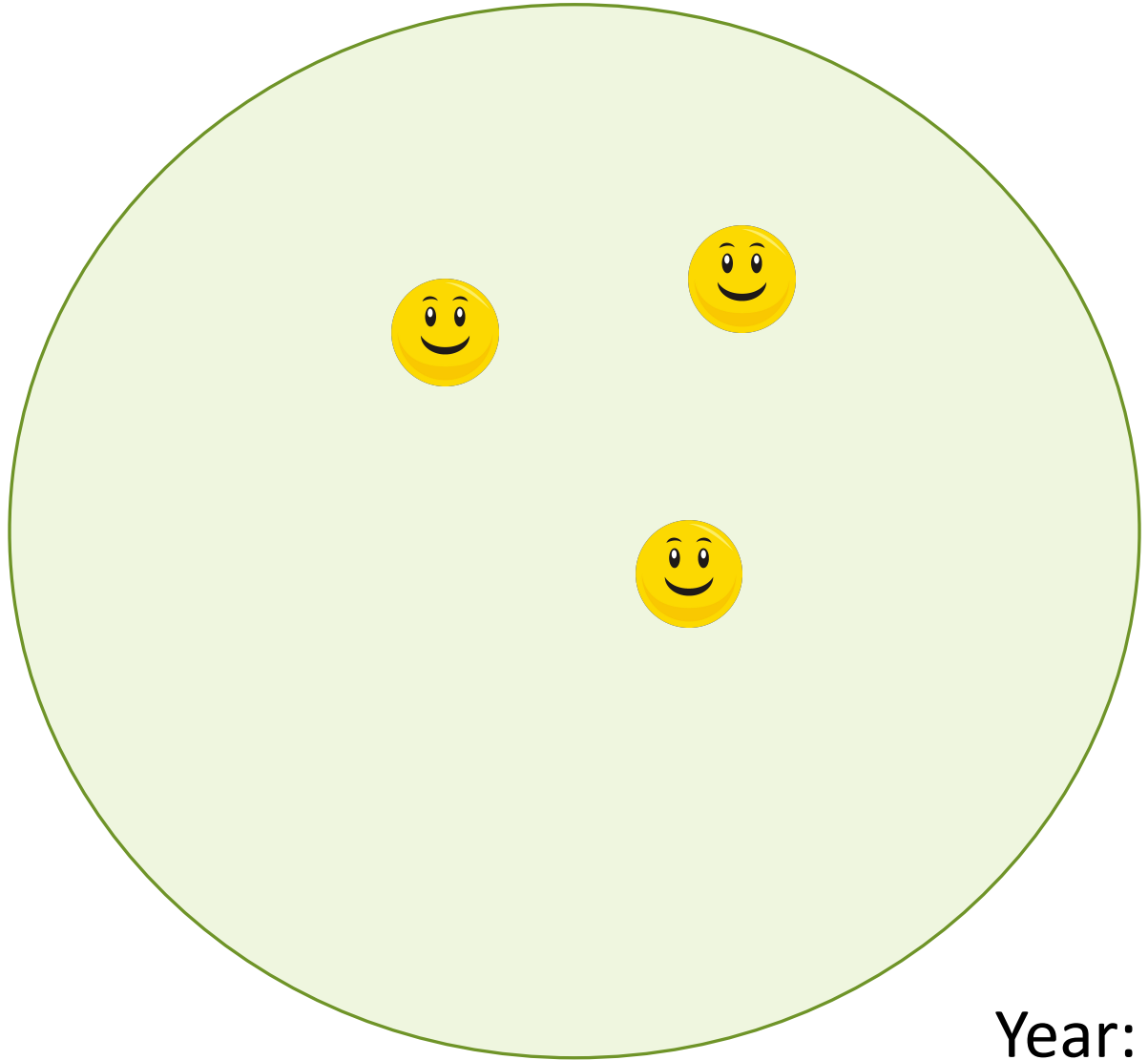
51



Year: 1780

# Population Circle

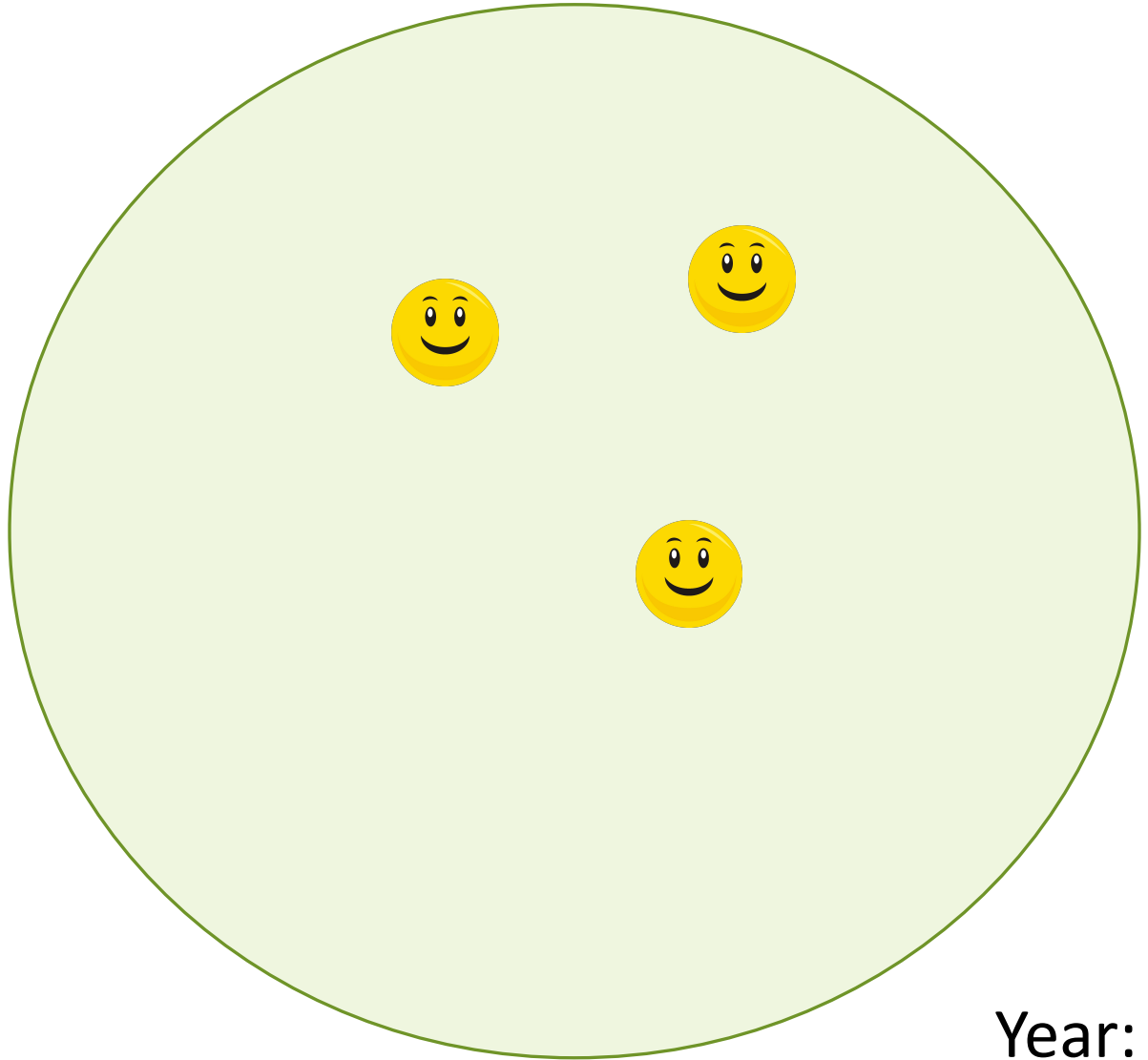
52



Year: 1785

# Population Circle

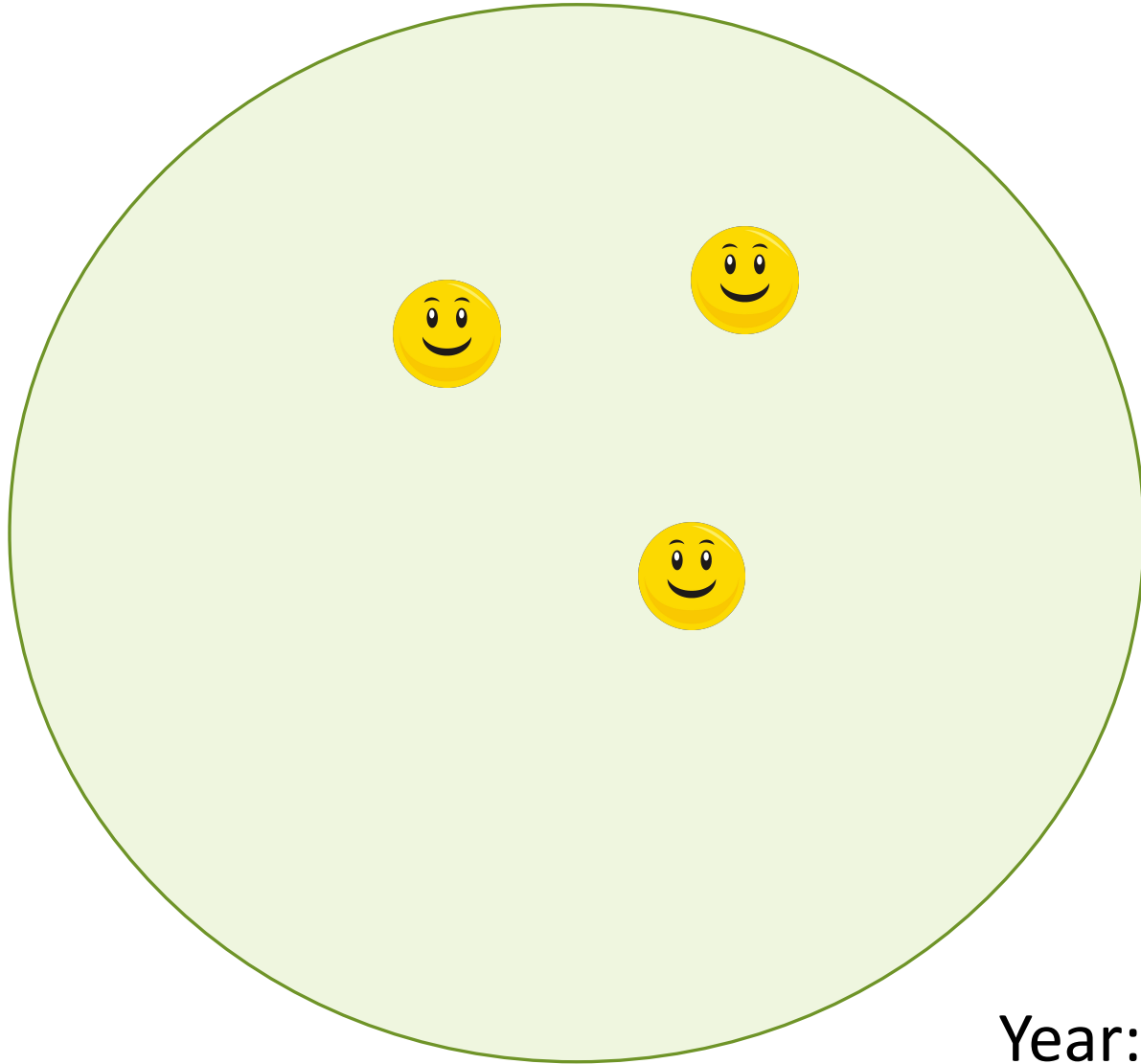
53



Year: 1790

# Population Circle

54

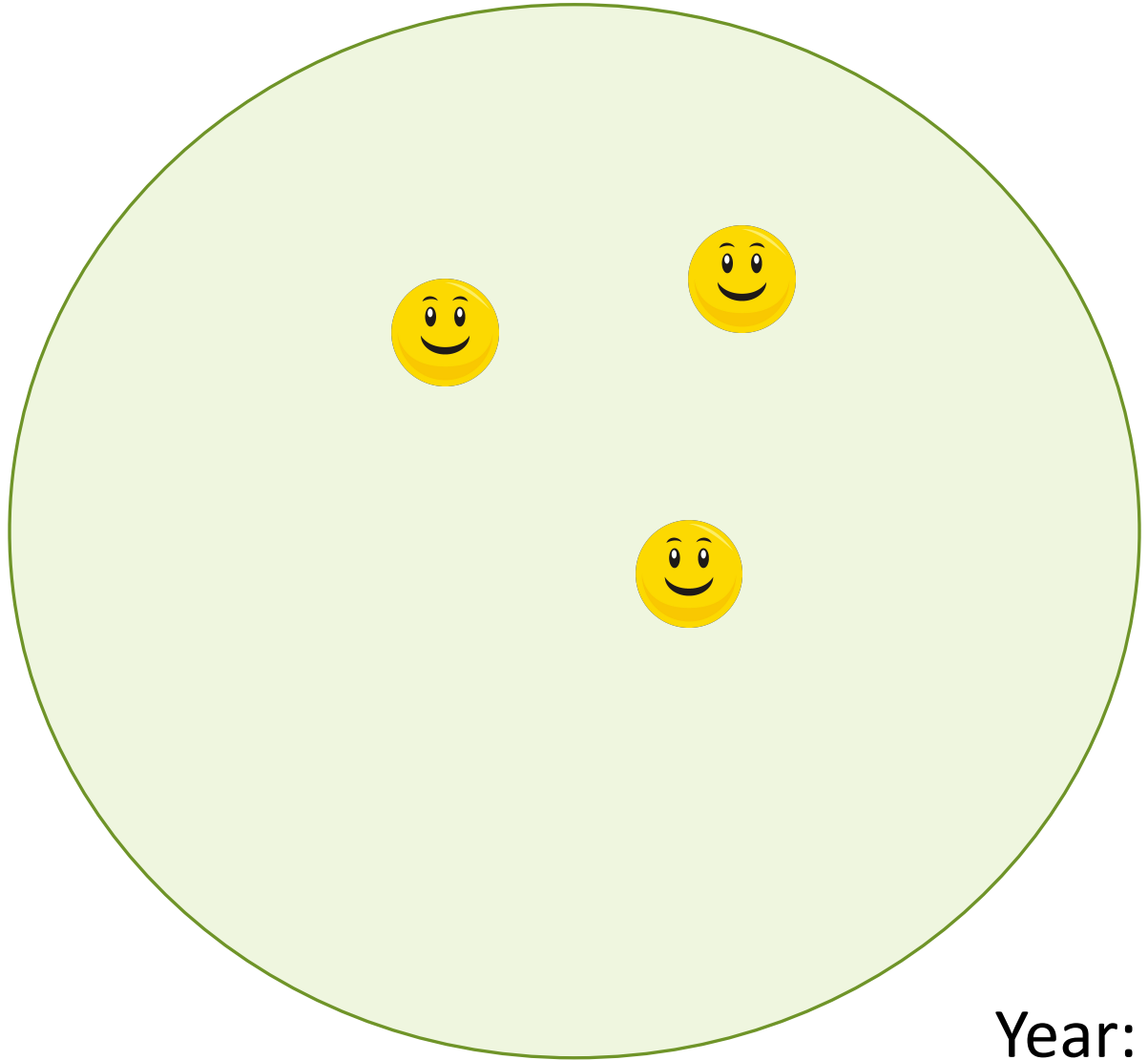


Year: 1795



# Population Circle

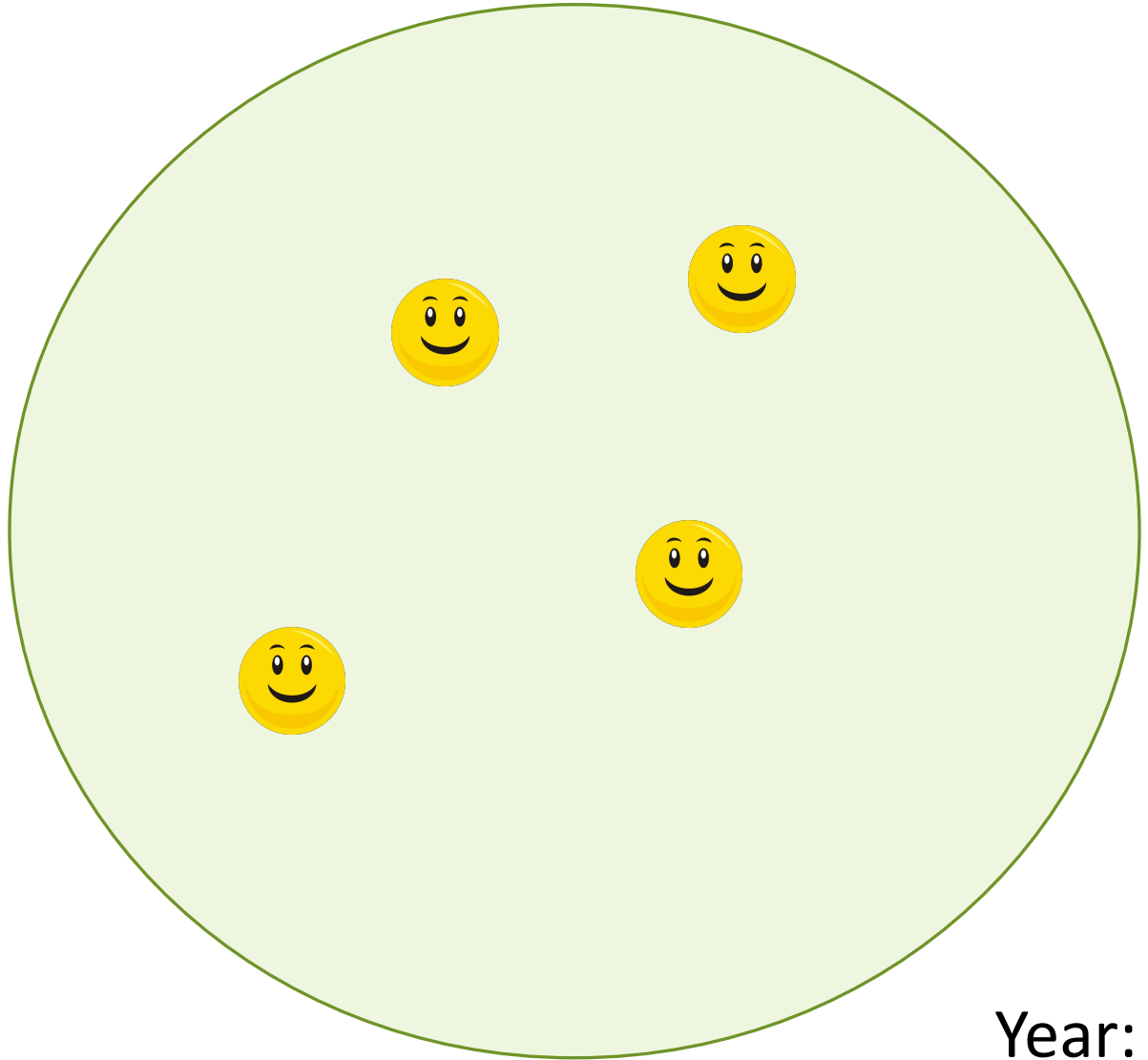
55



Year: 1800

# Population Circle

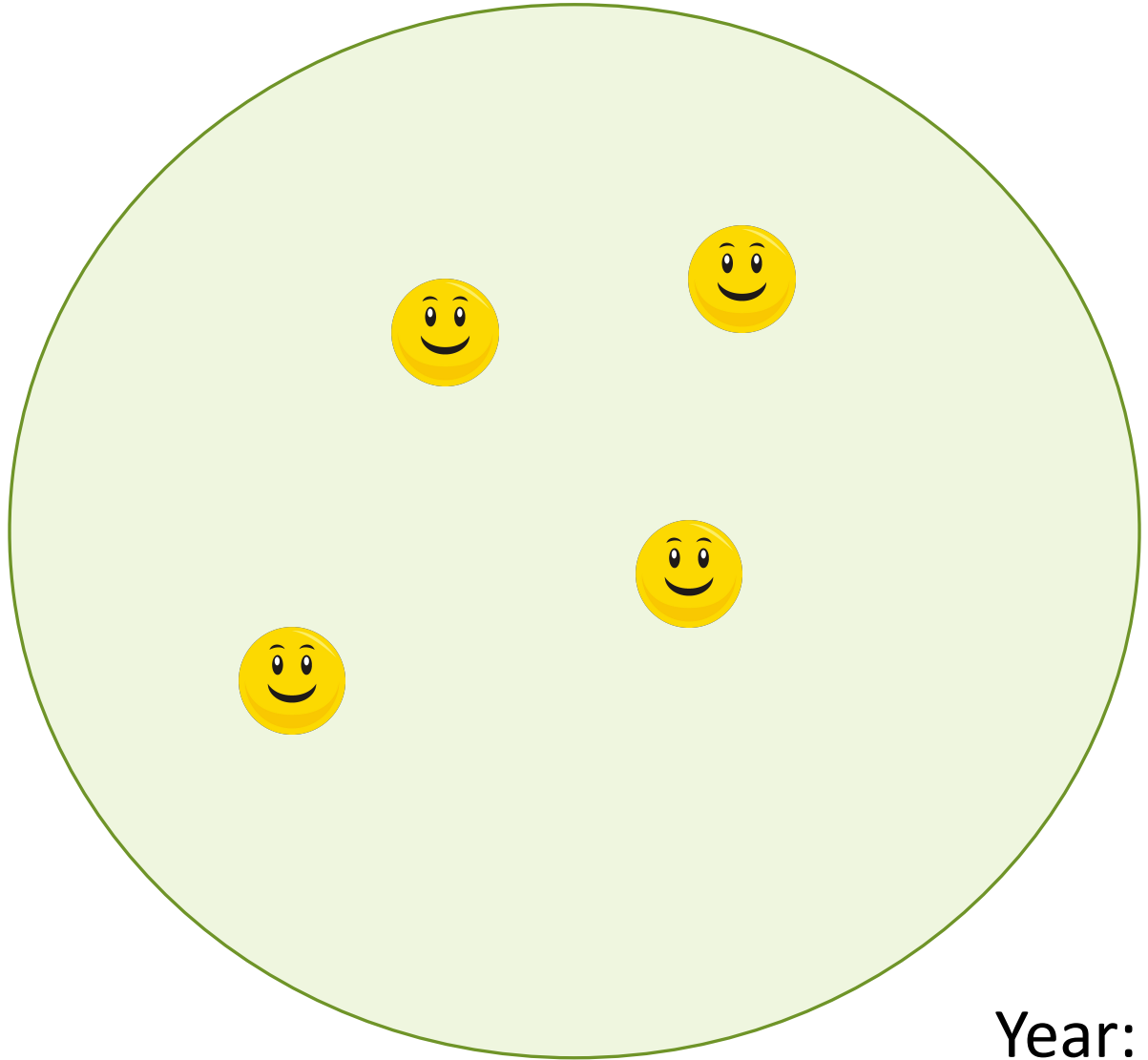
56



Year: 1805

# Population Circle

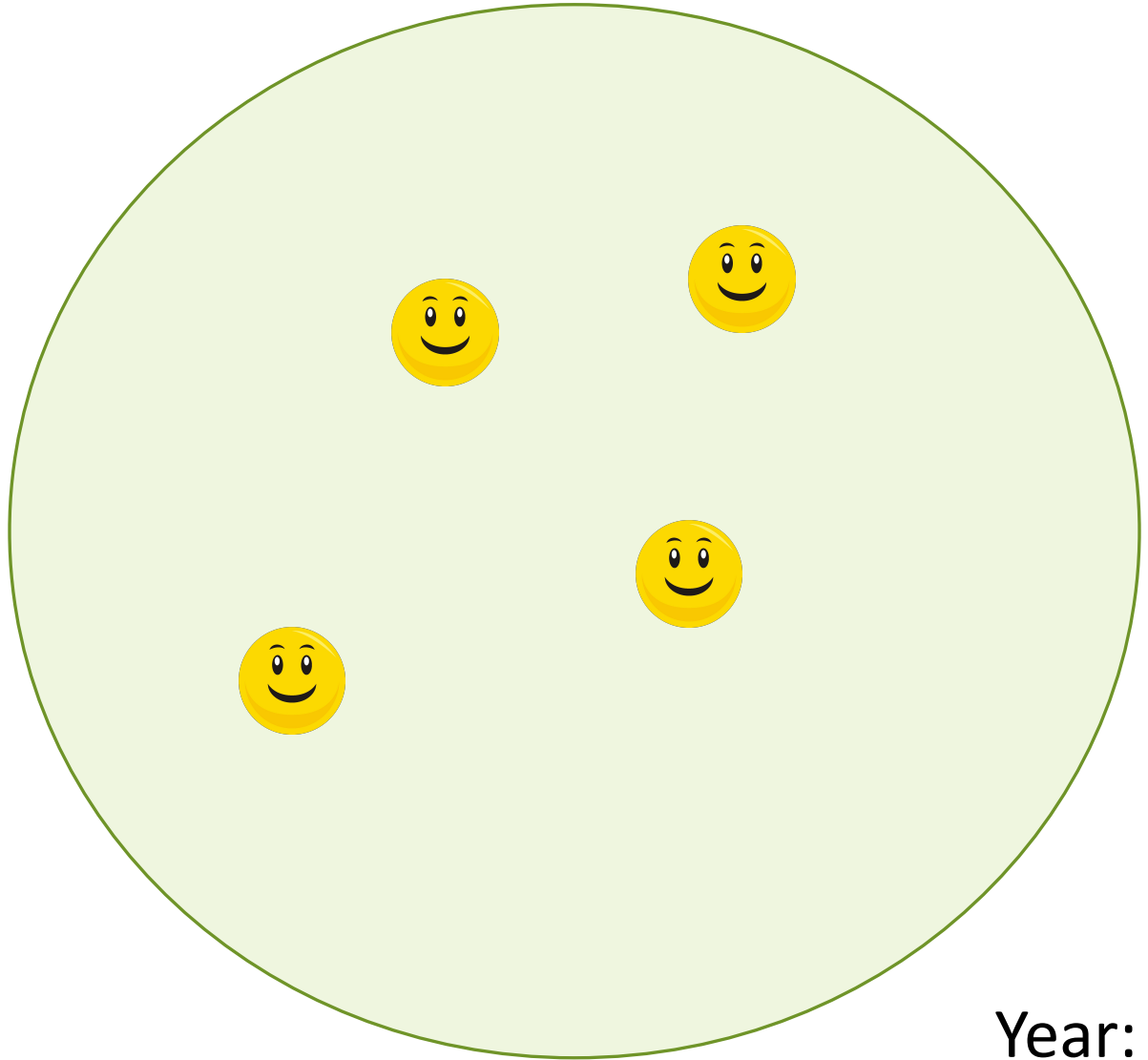
57



Year: 1810

# Population Circle

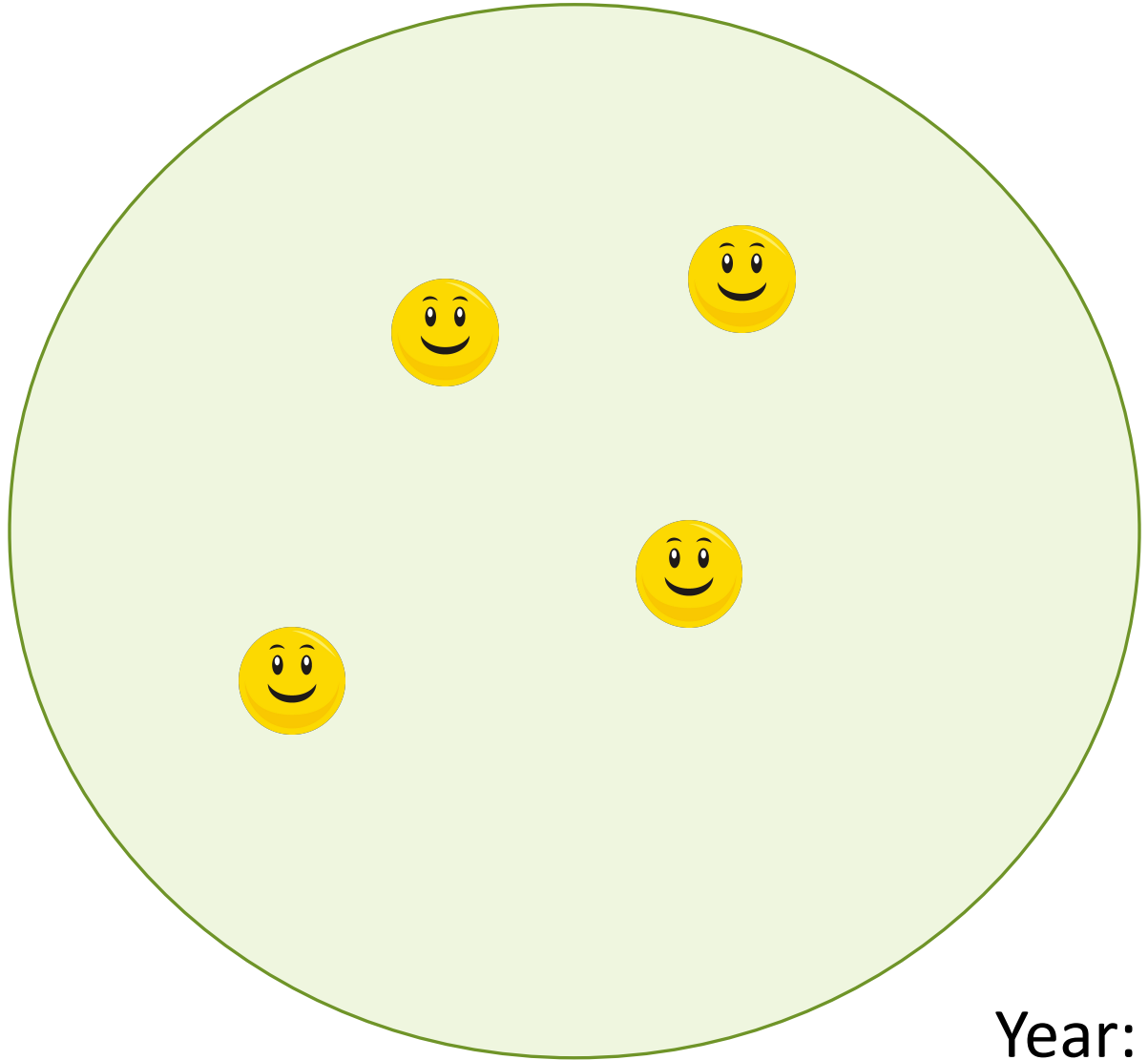
58



Year: 1815

# Population Circle

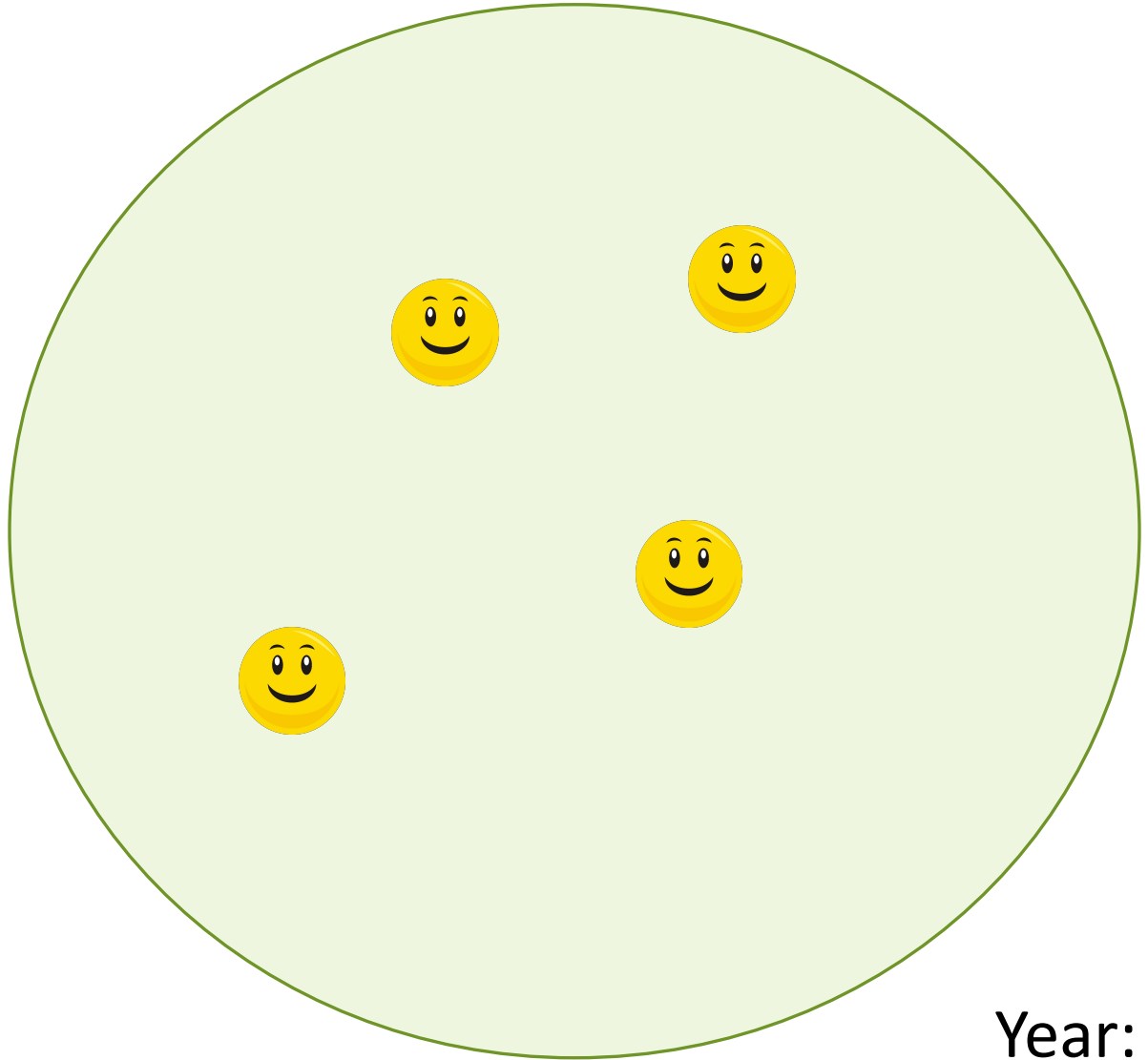
59



Year: 1820

# Population Circle

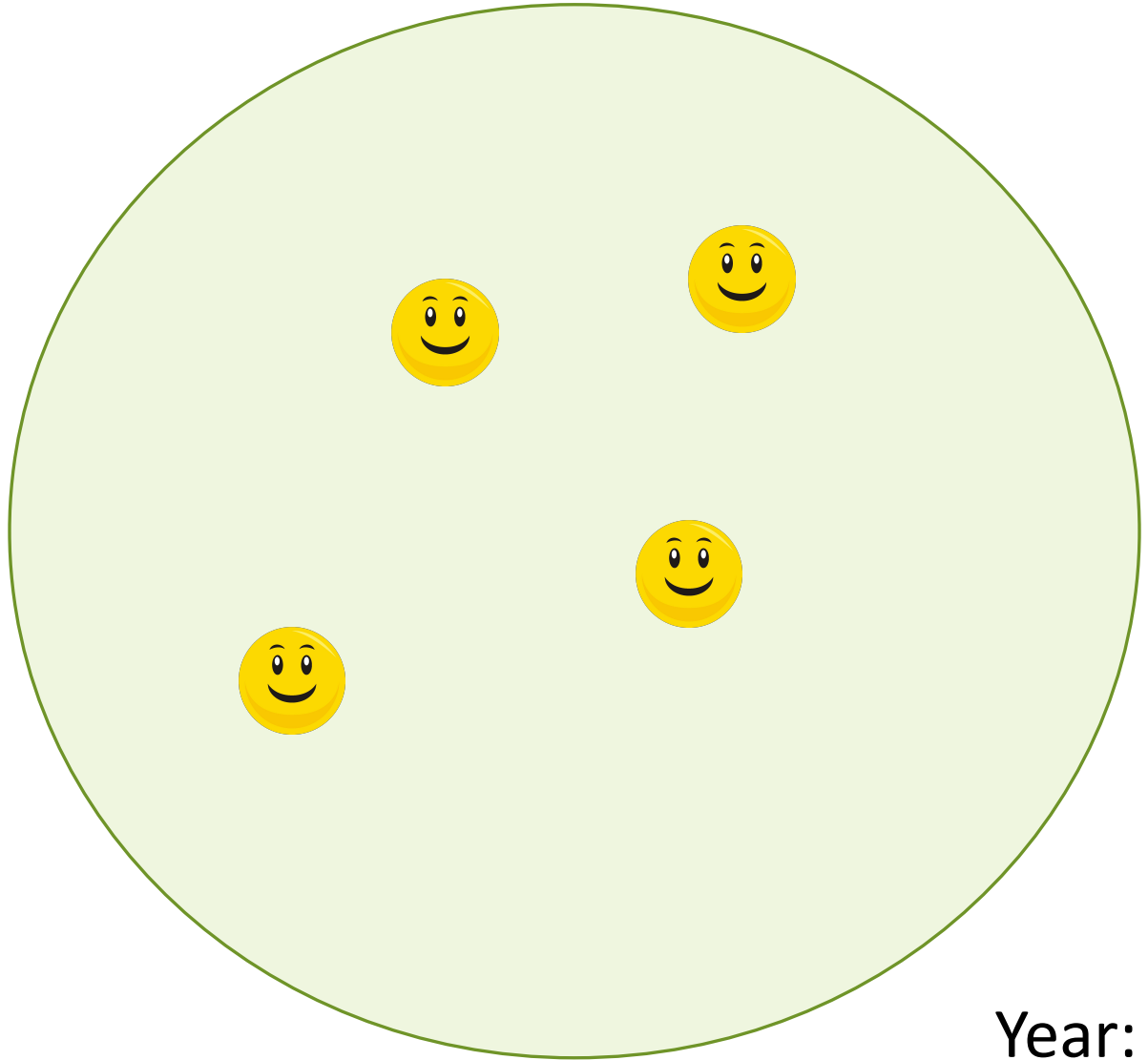
60



Year: 1825

# Population Circle

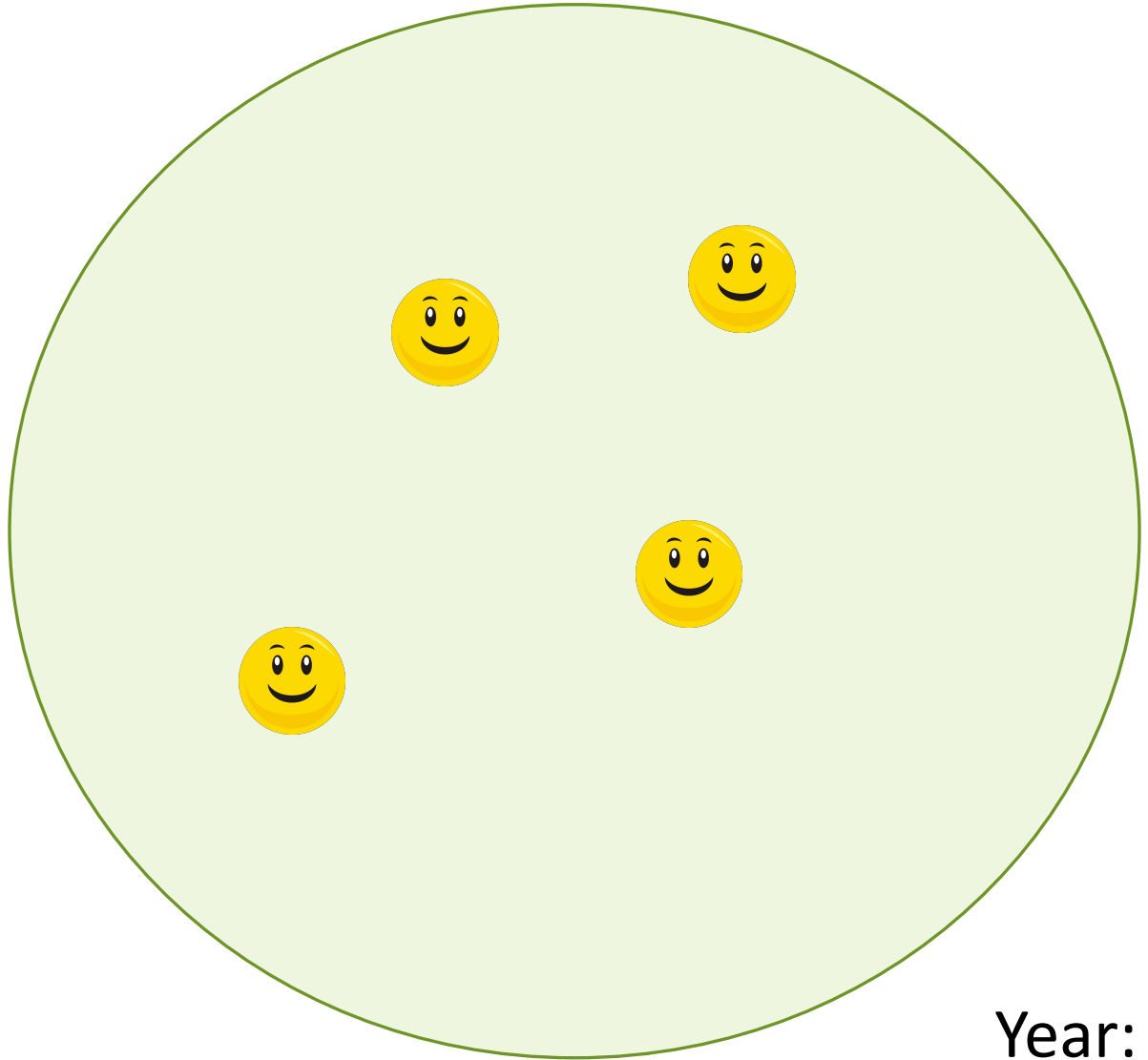
61



Year: 1830

# Population Circle

62

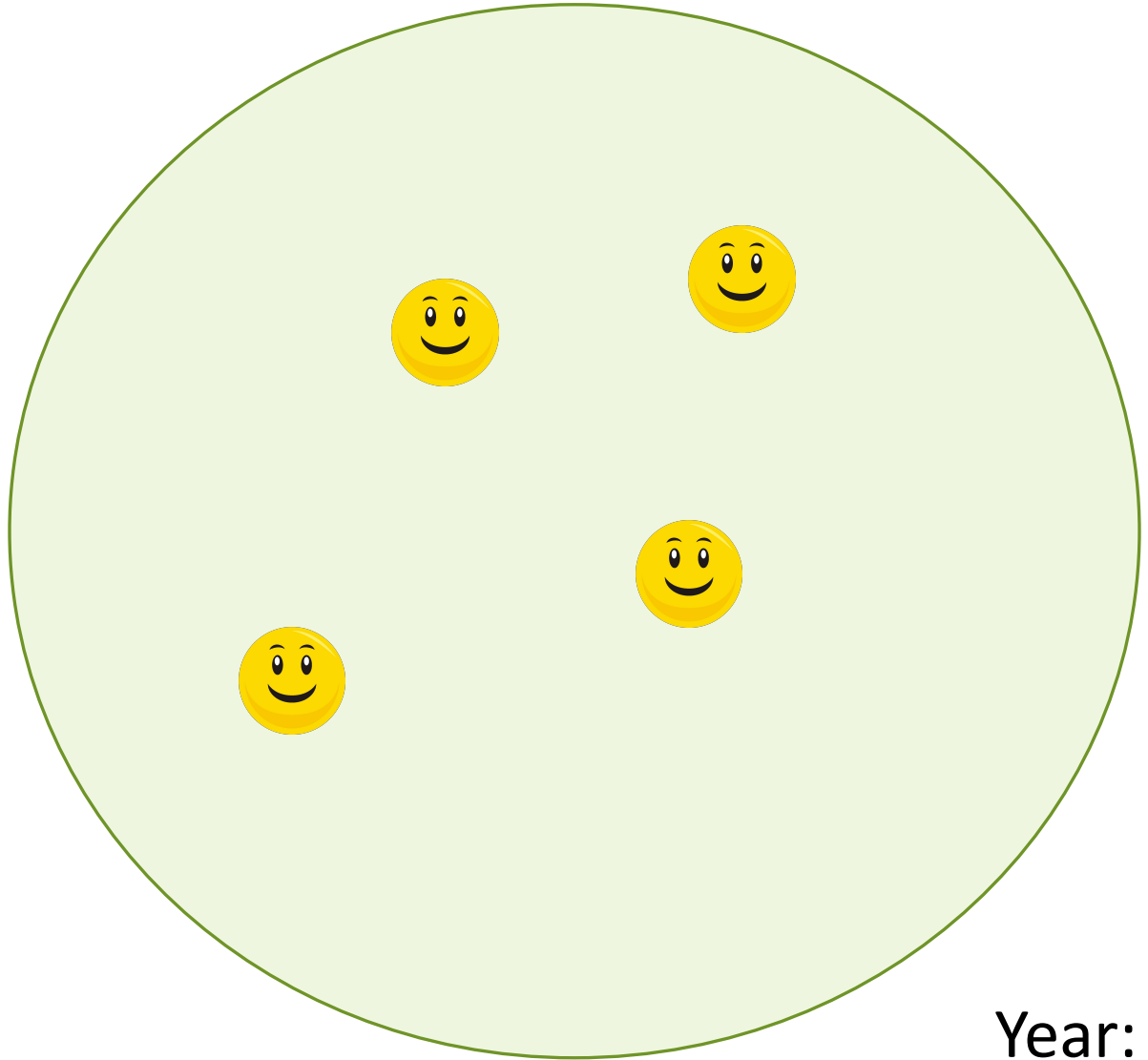


Year: 1835



# Population Circle

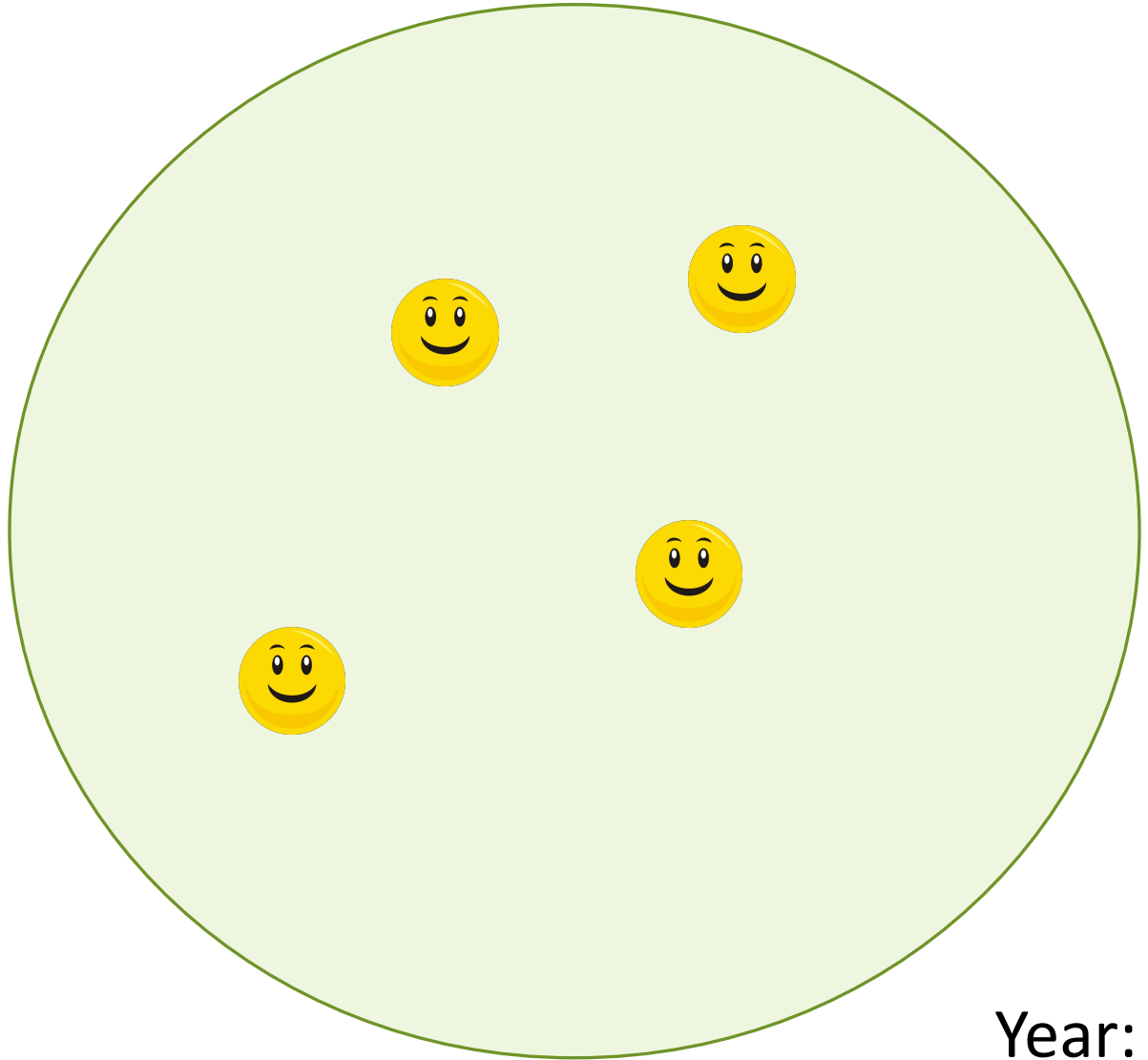
63



Year: 1840

# Population Circle

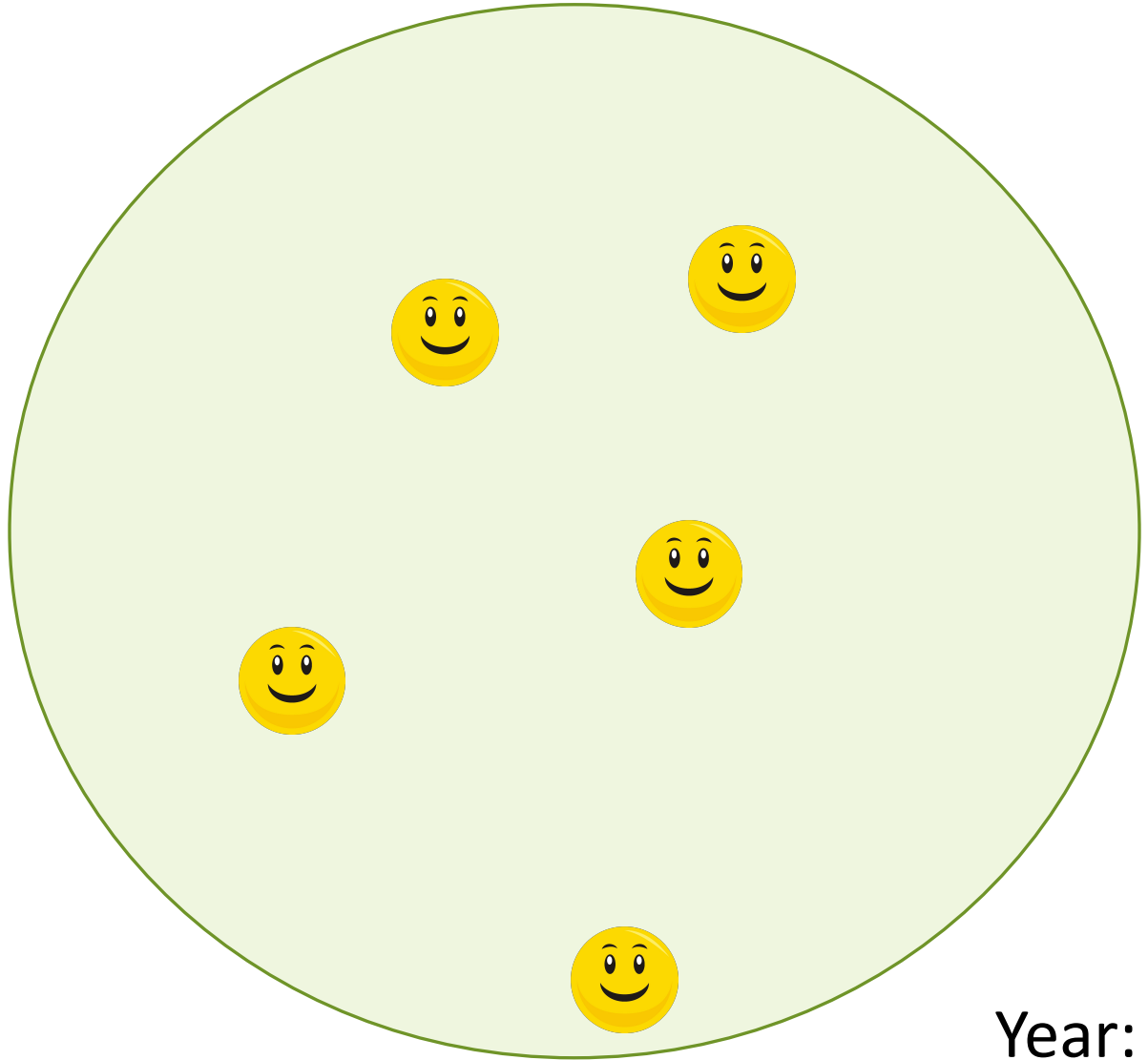
64



Year: 1845

# Population Circle

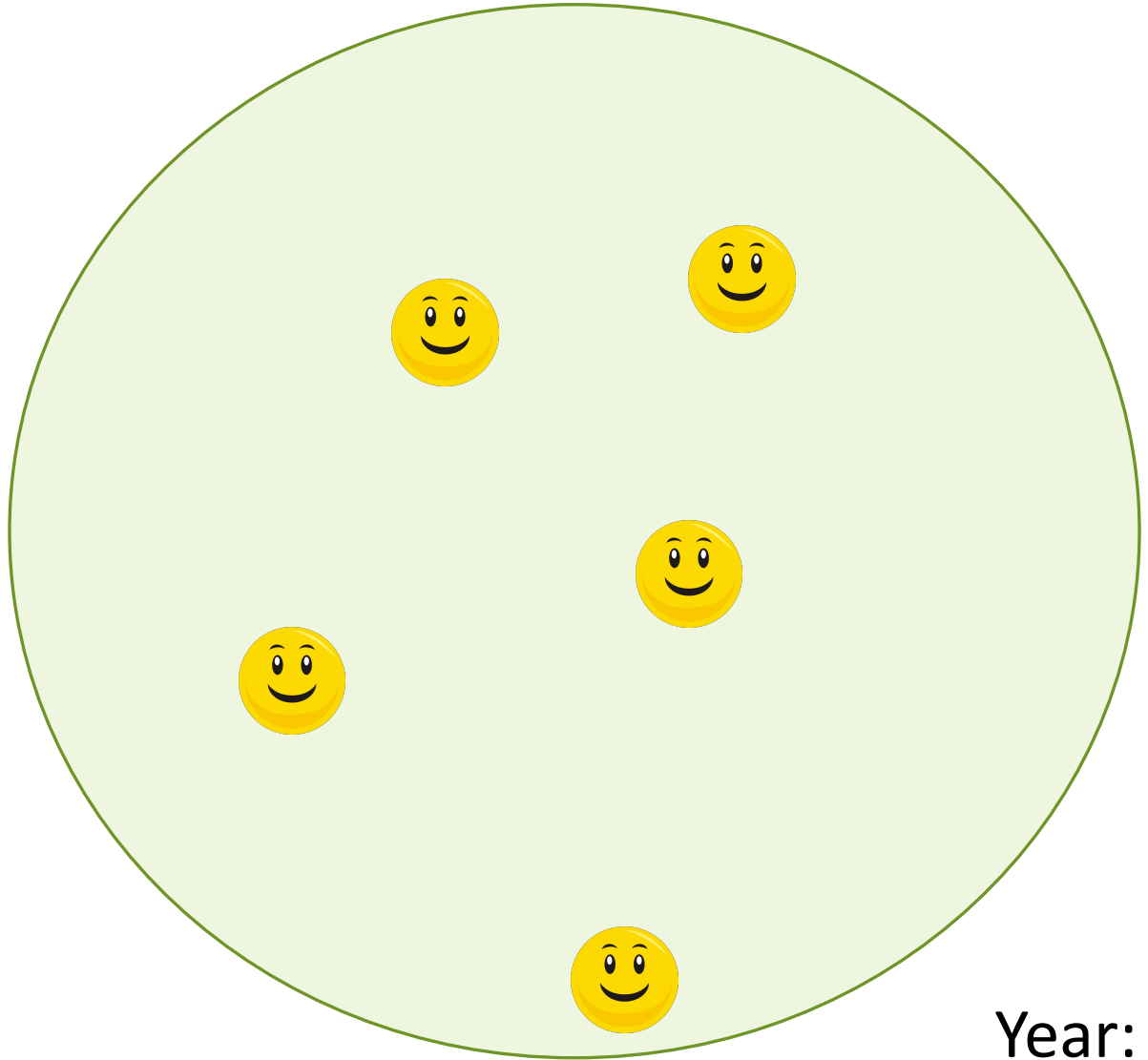
65



Year: 1850

# Population Circle

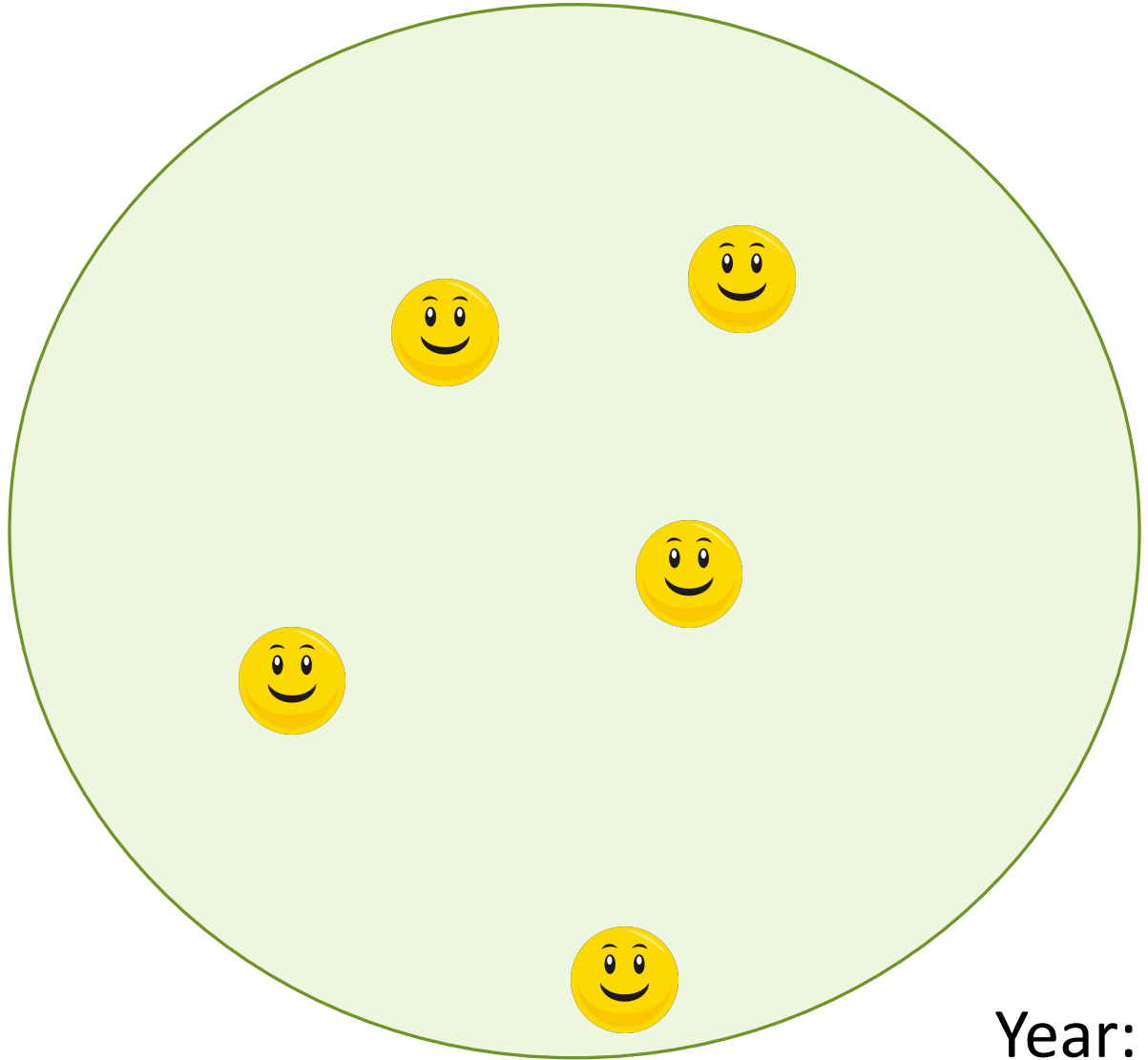
66



Year: 1855

# Population Circle

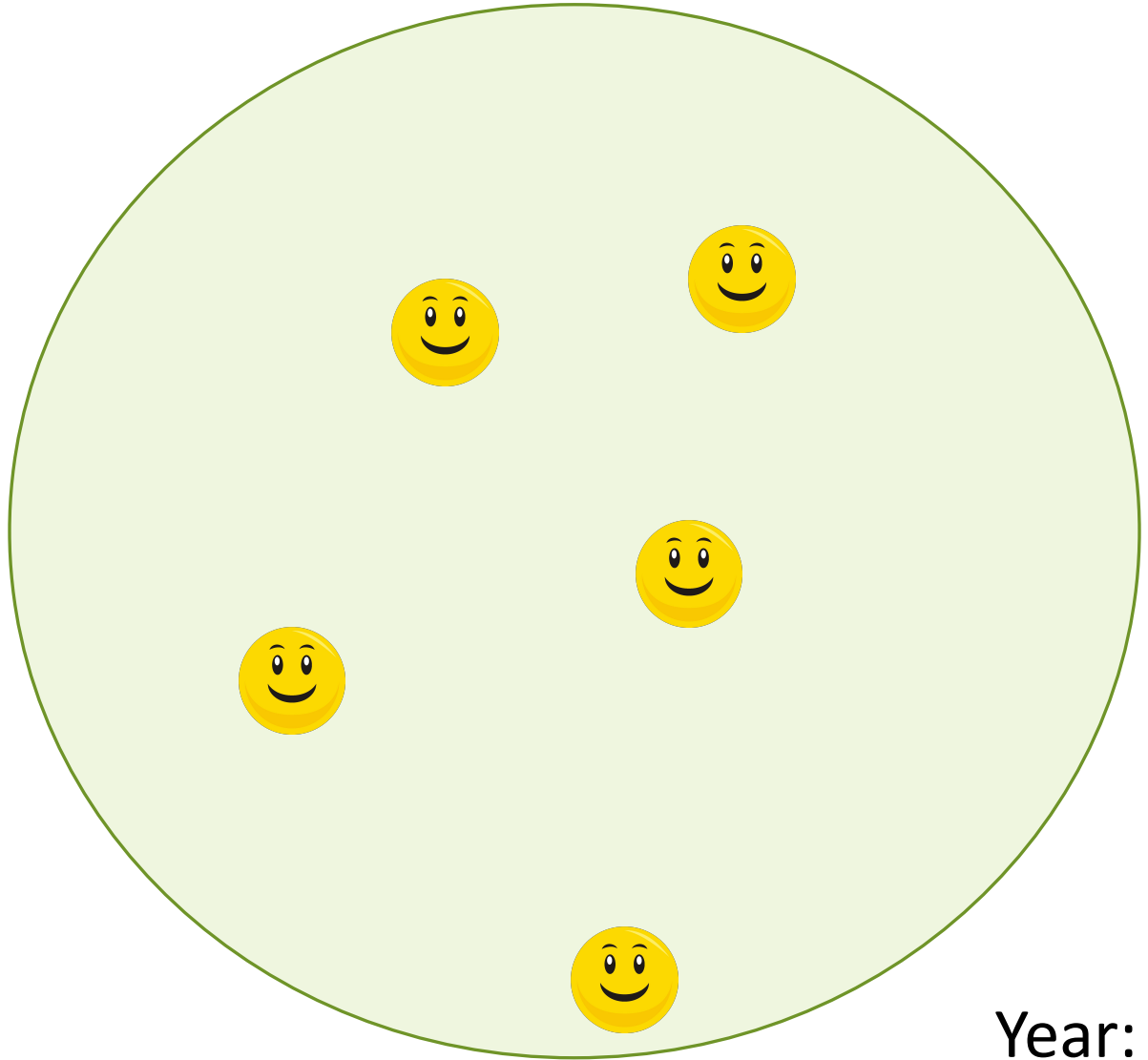
67



Year: 1860

# Population Circle

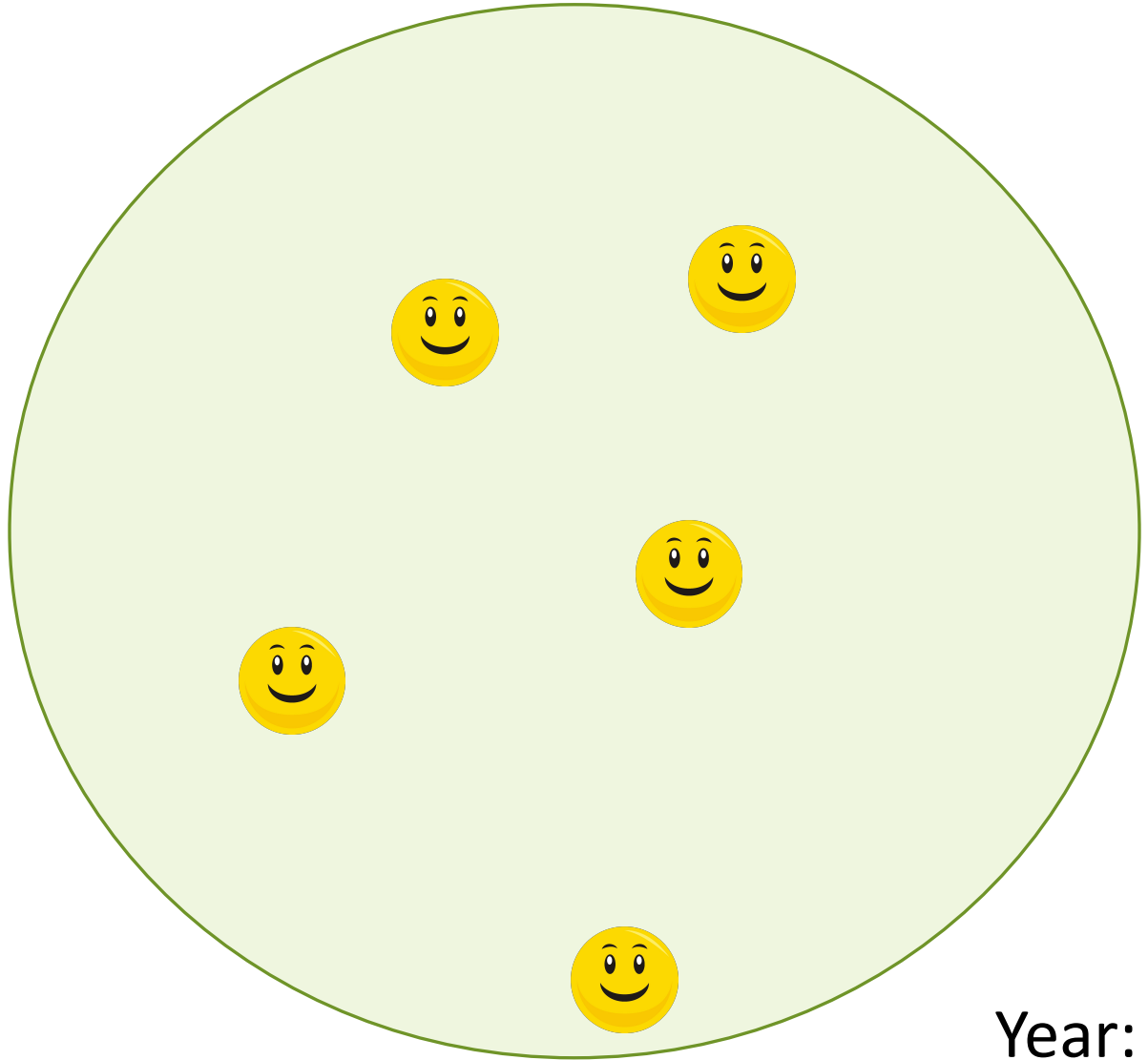
68



Year: 1865

# Population Circle

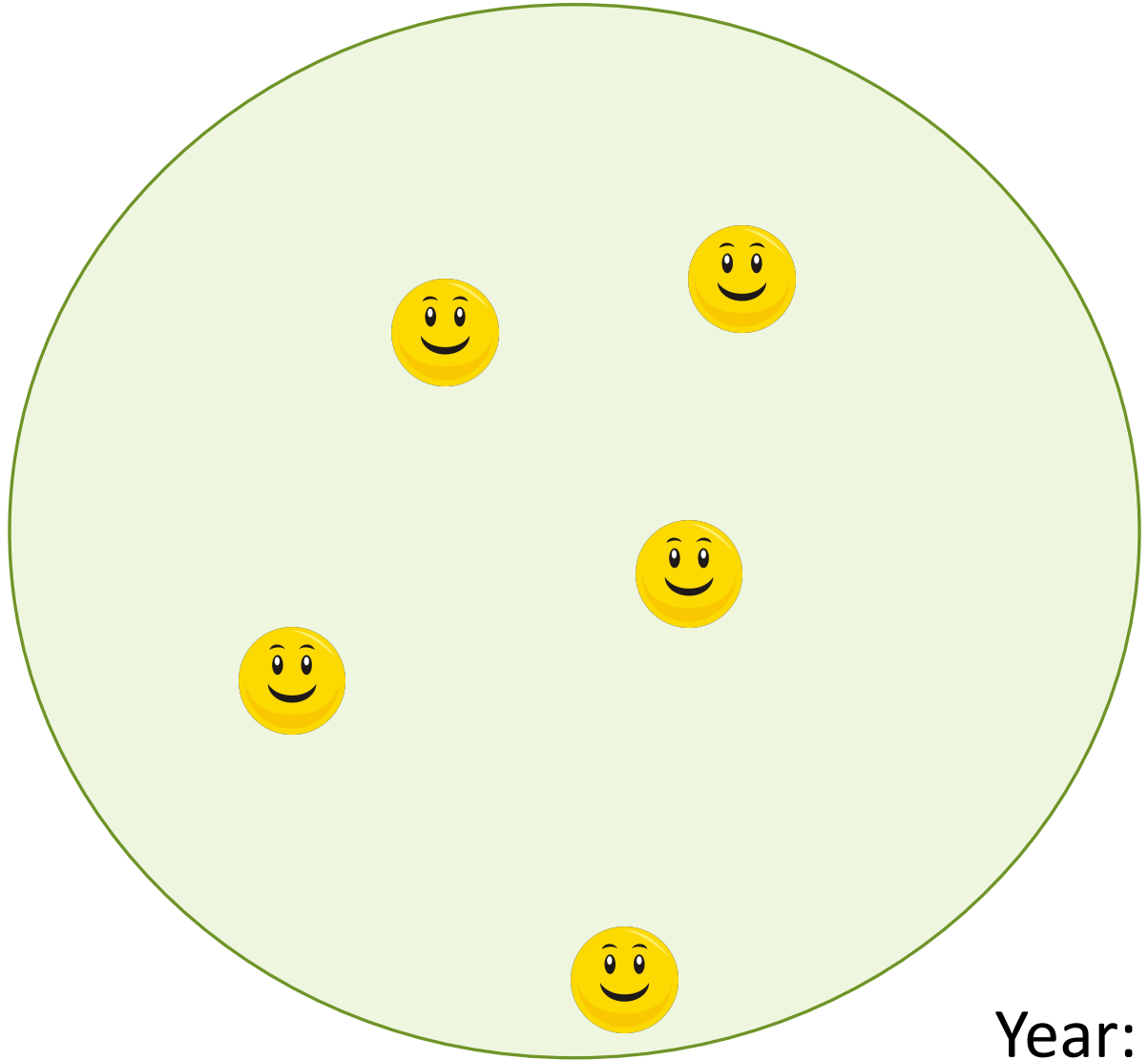
69



Year: 1870

# Population Circle

70

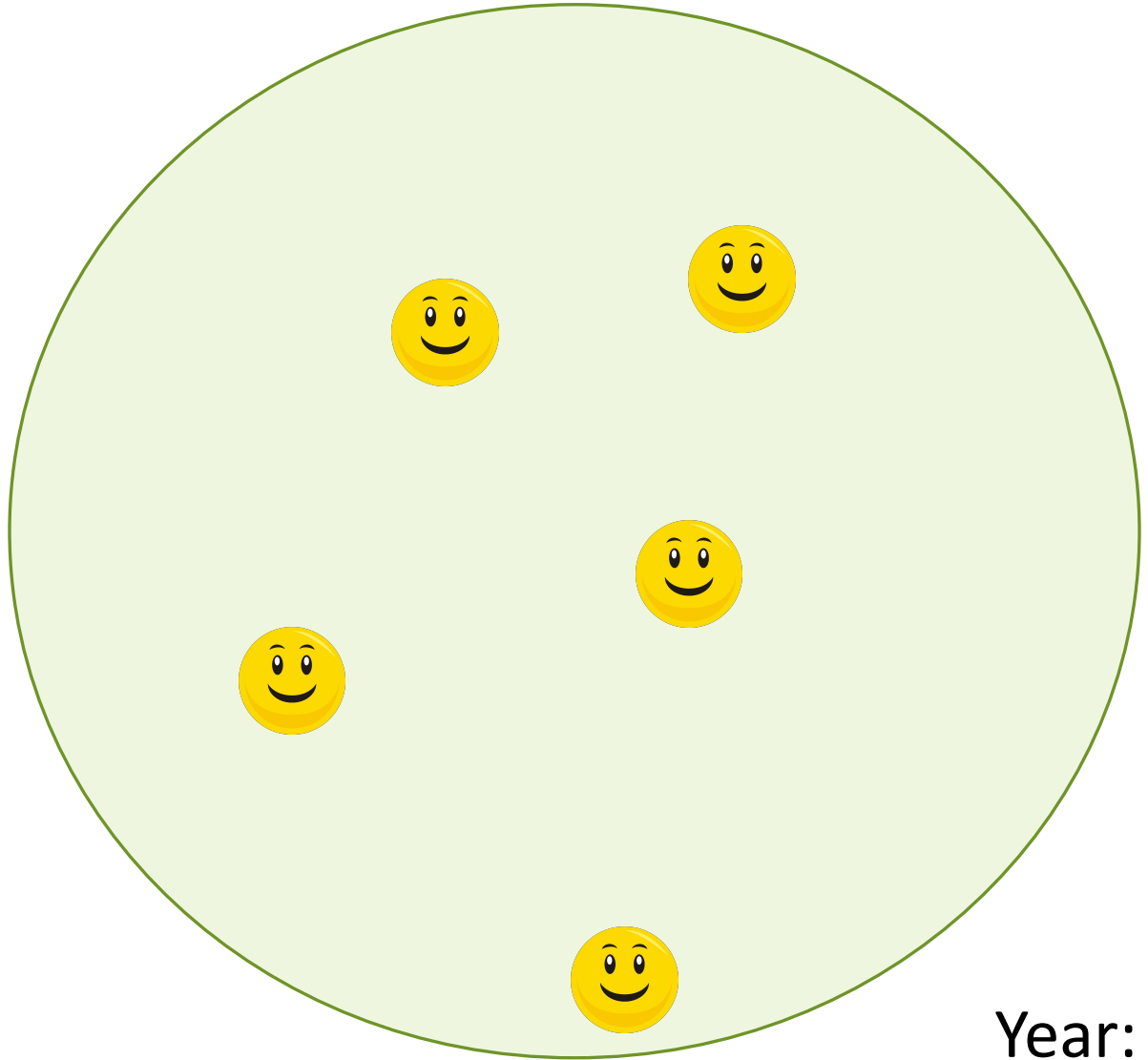


Year: 1875



# Population Circle

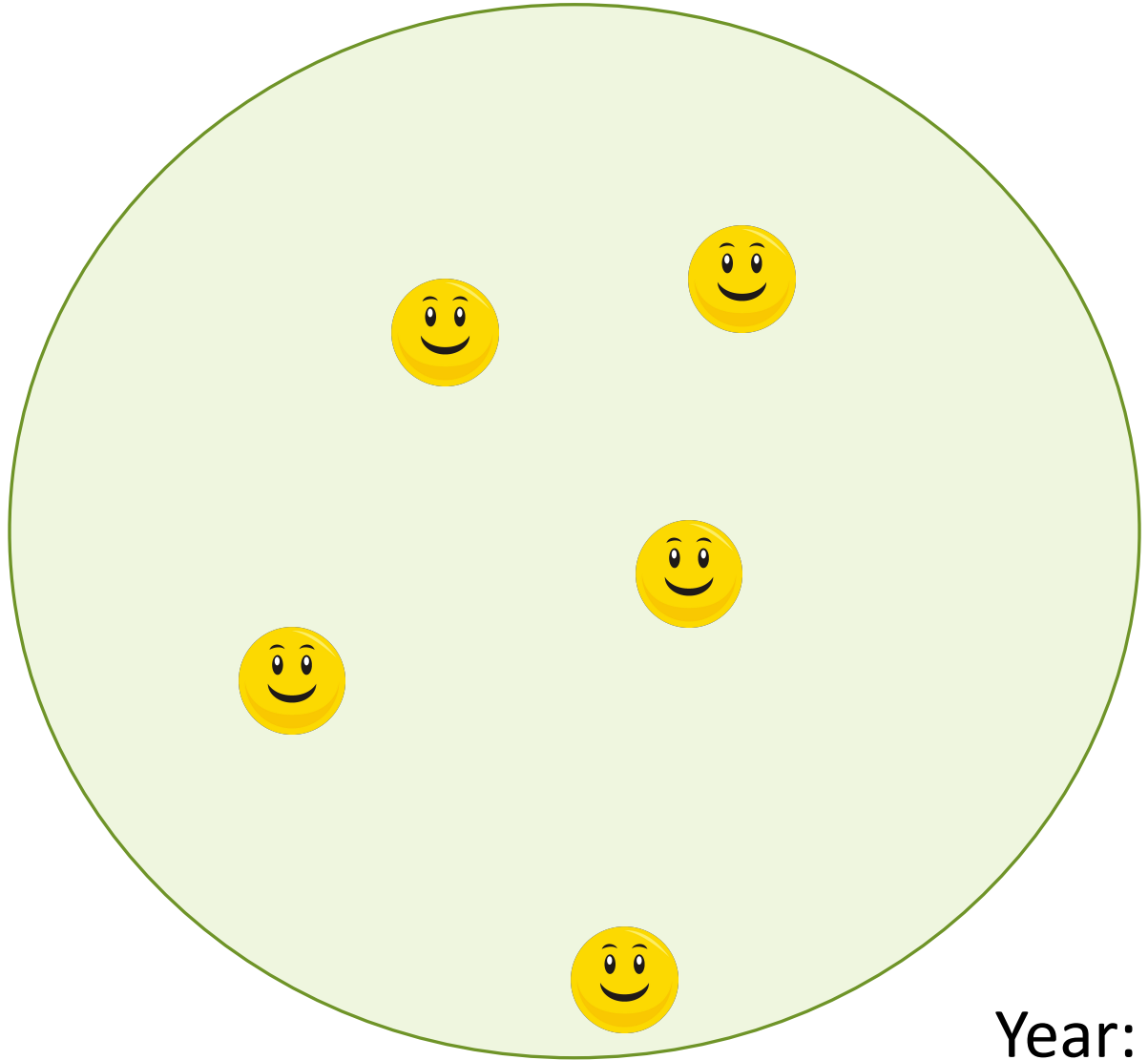
71



Year: 1880

# Population Circle

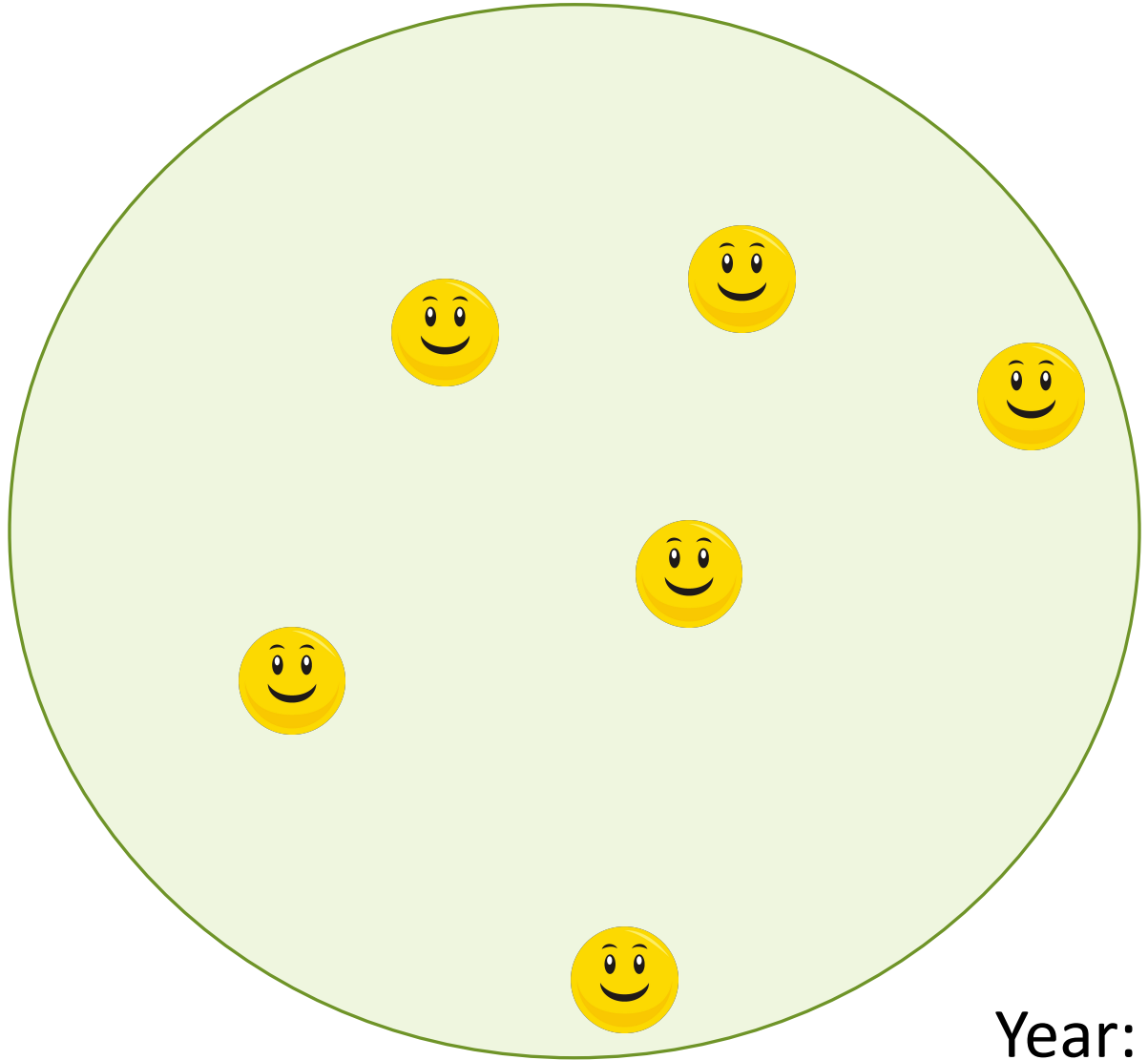
72



Year: 1885

# Population Circle

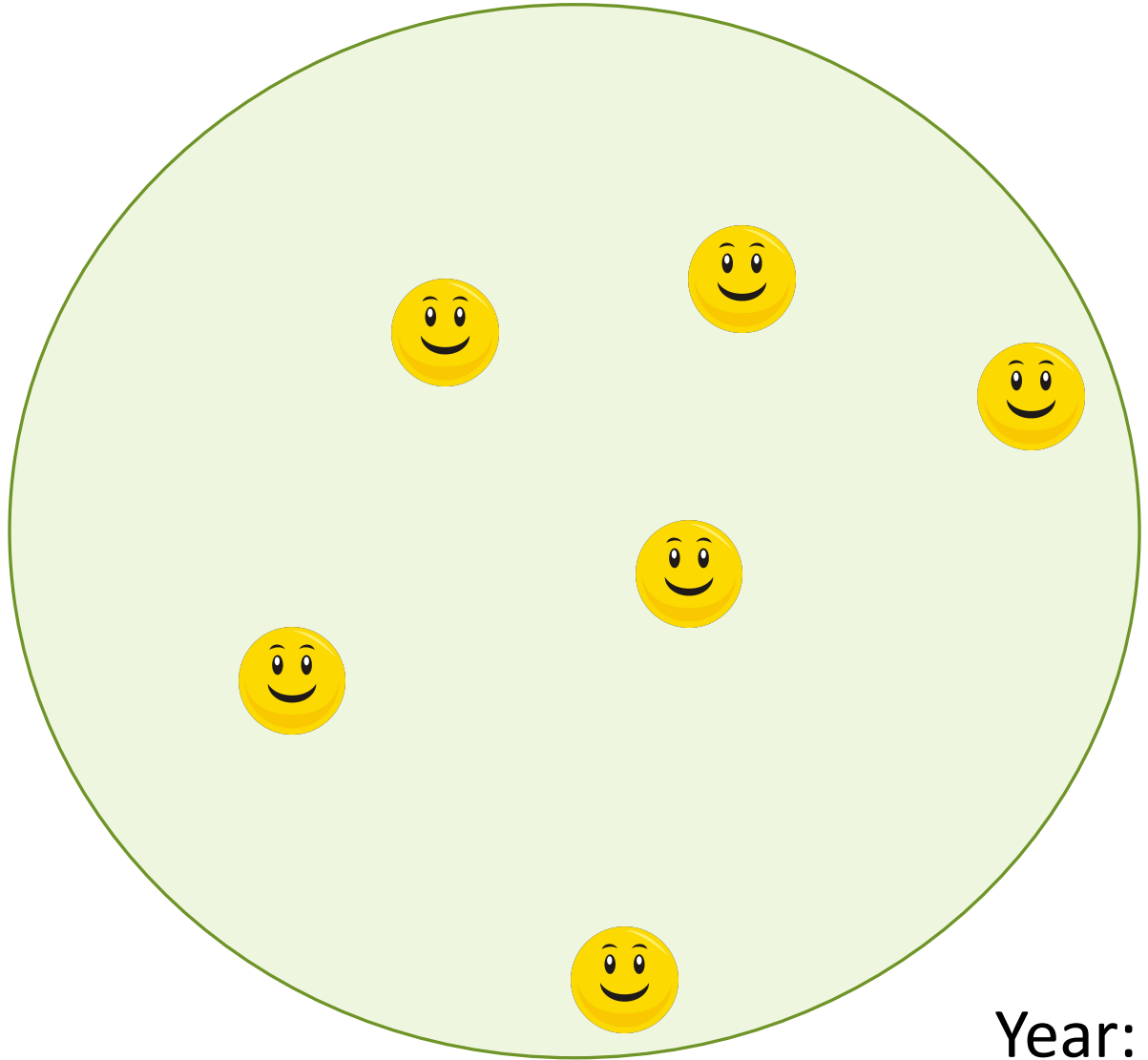
73



Year: 1890

# Population Circle

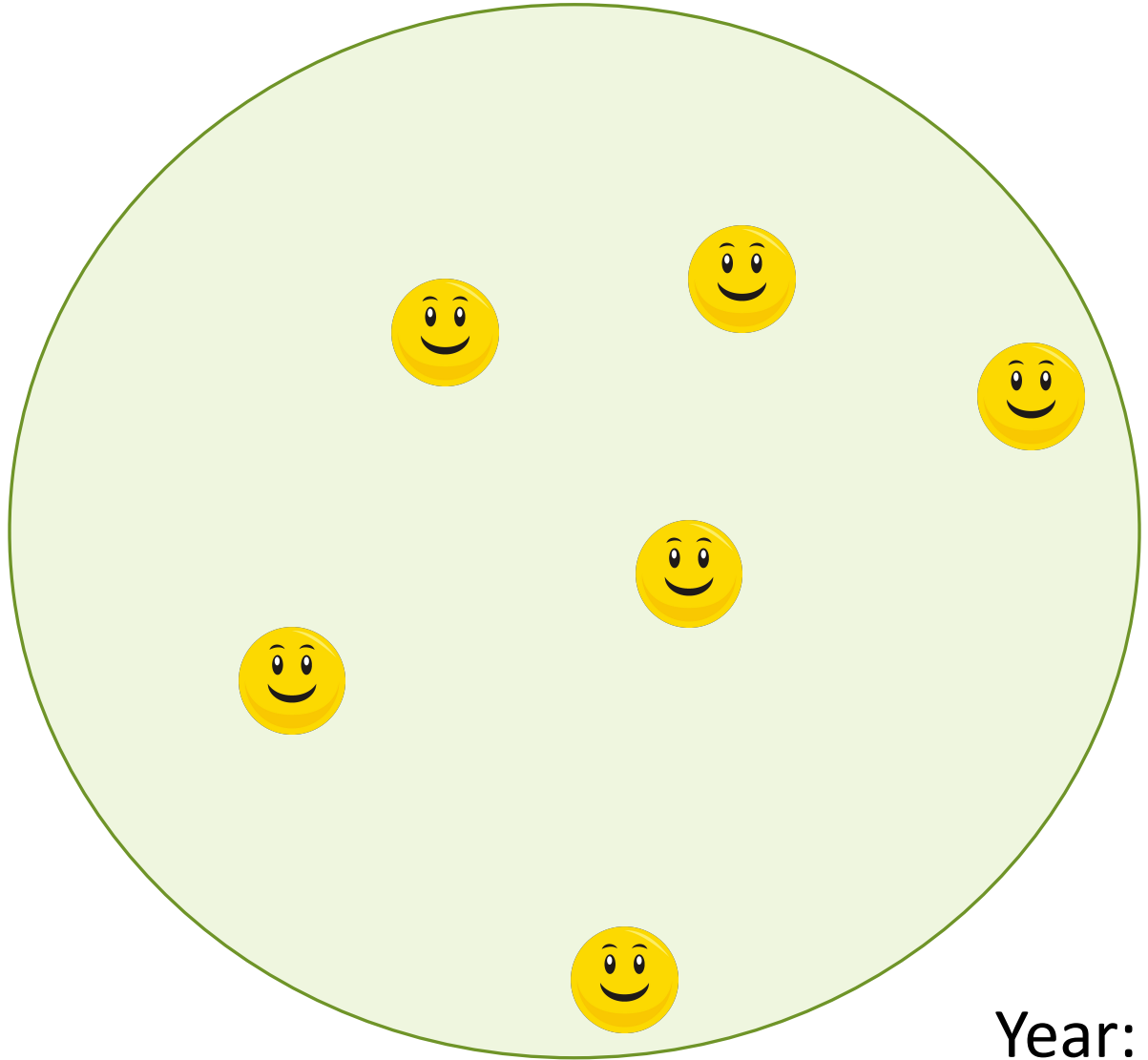
74



Year: 1895

# Population Circle

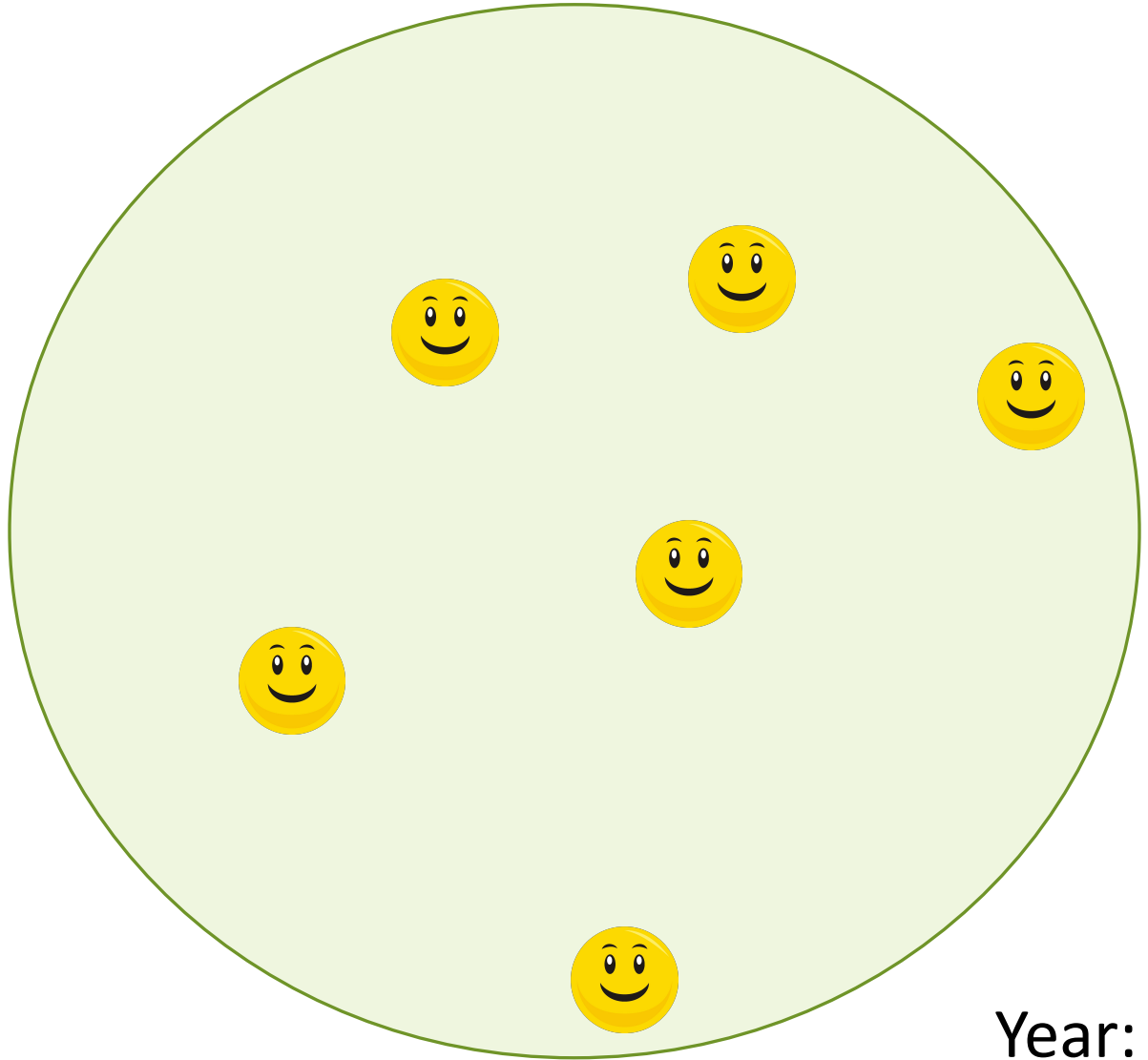
75



Year: 1900

# Population Circle

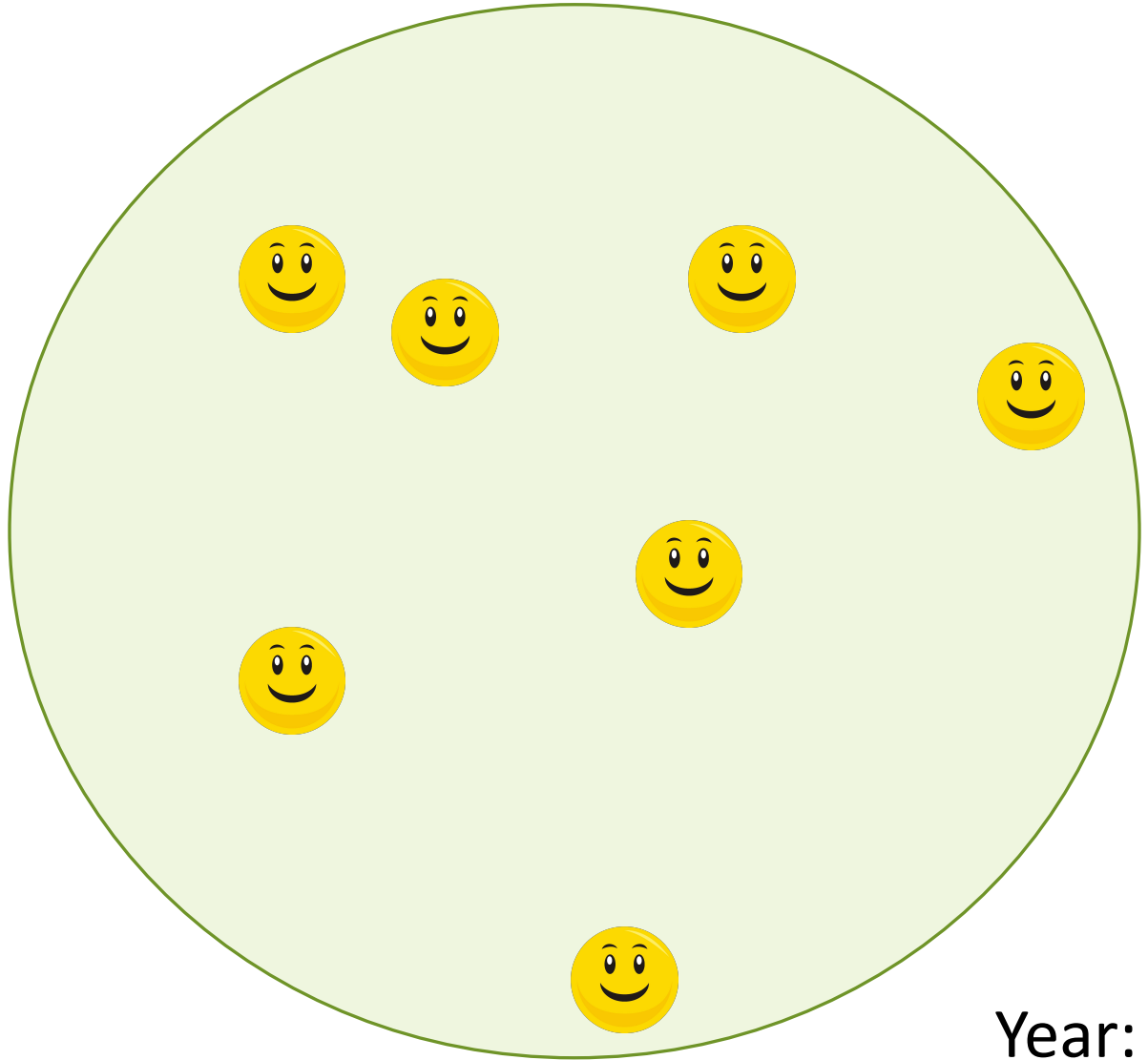
76



Year: 1905

# Population Circle

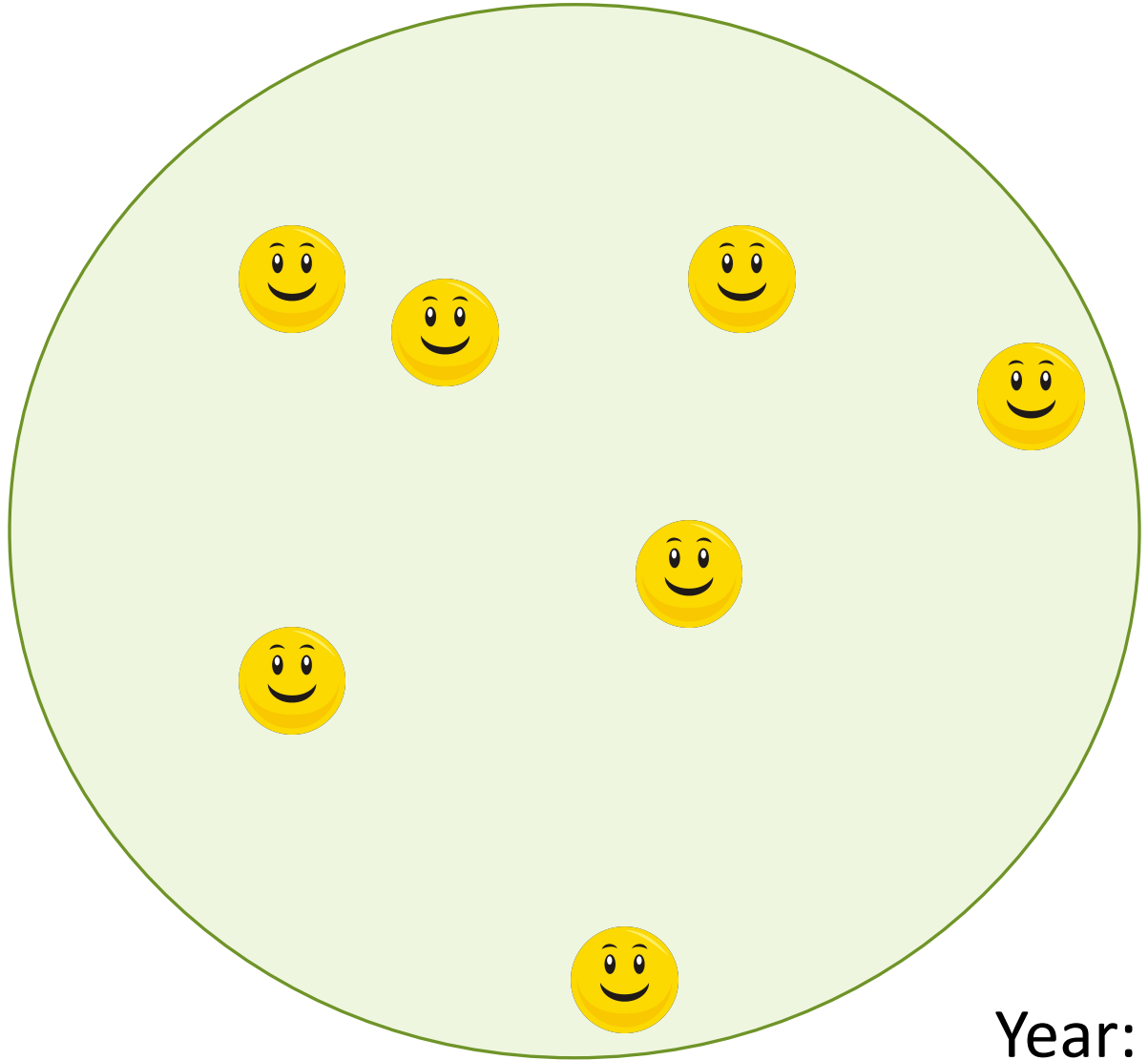
77



Year: 1910

# Population Circle

78

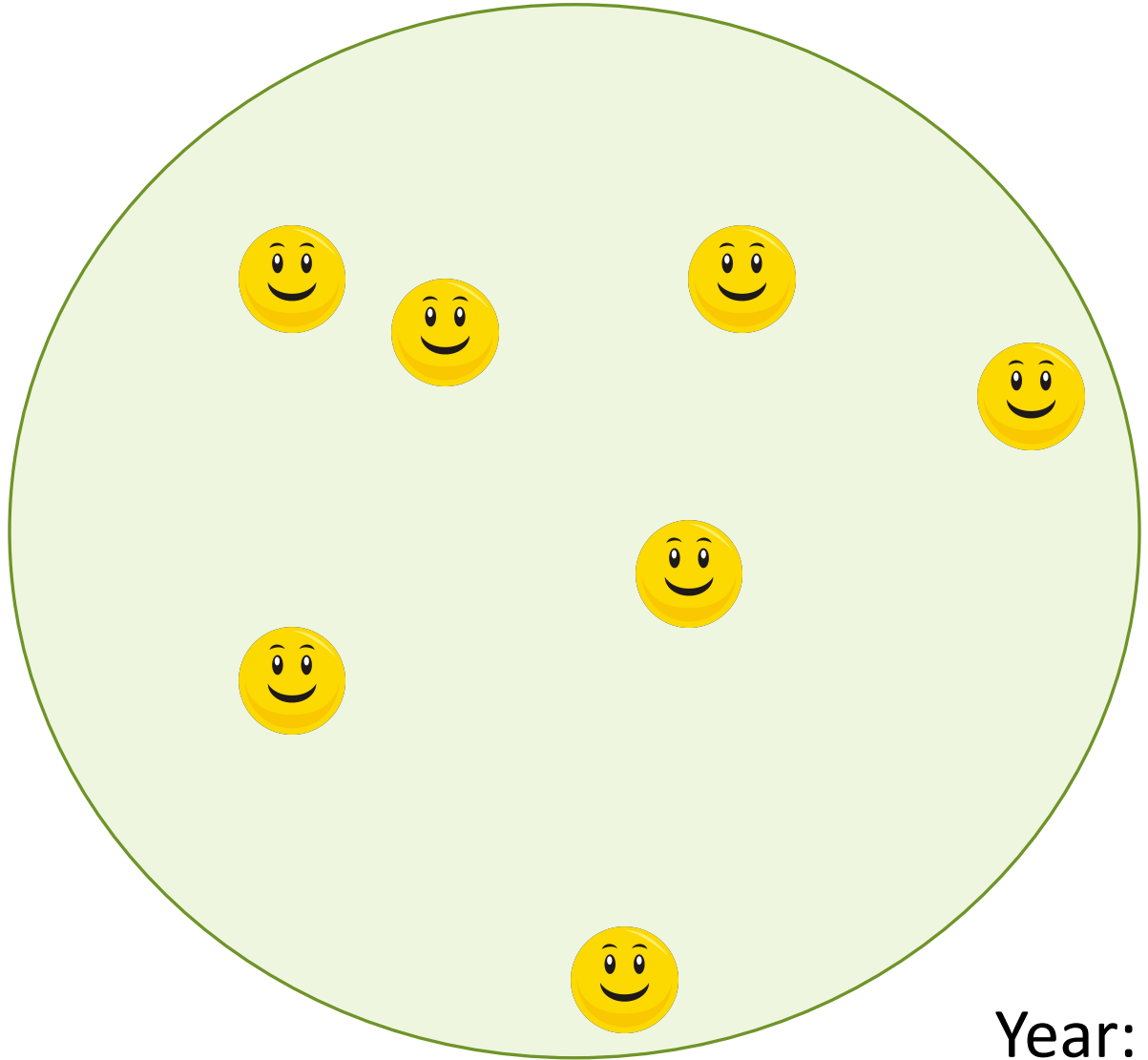


Year: 1915



# Population Circle

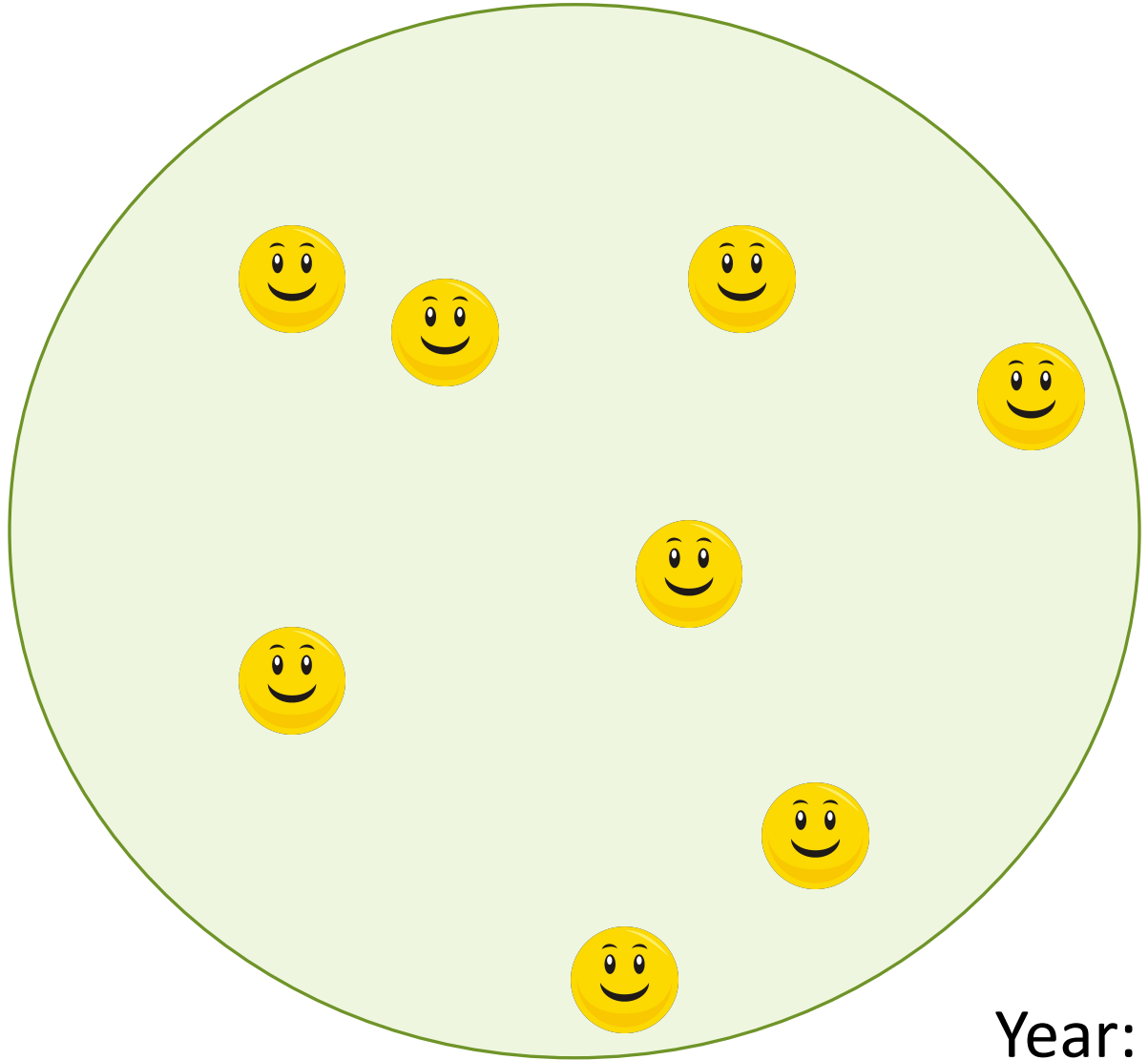
79



Year: 1920

# Population Circle

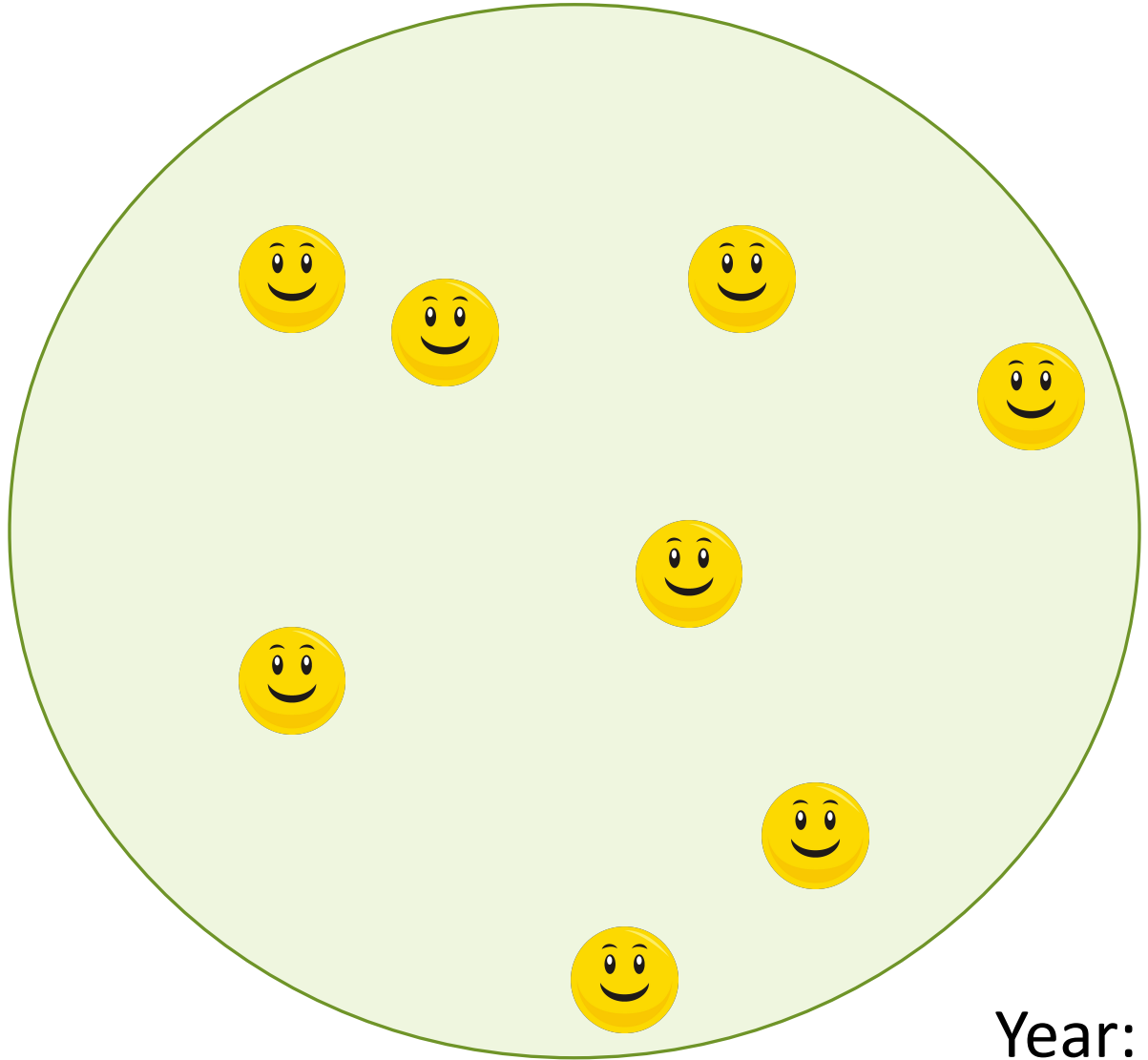
80



Year: 1925

# Population Circle

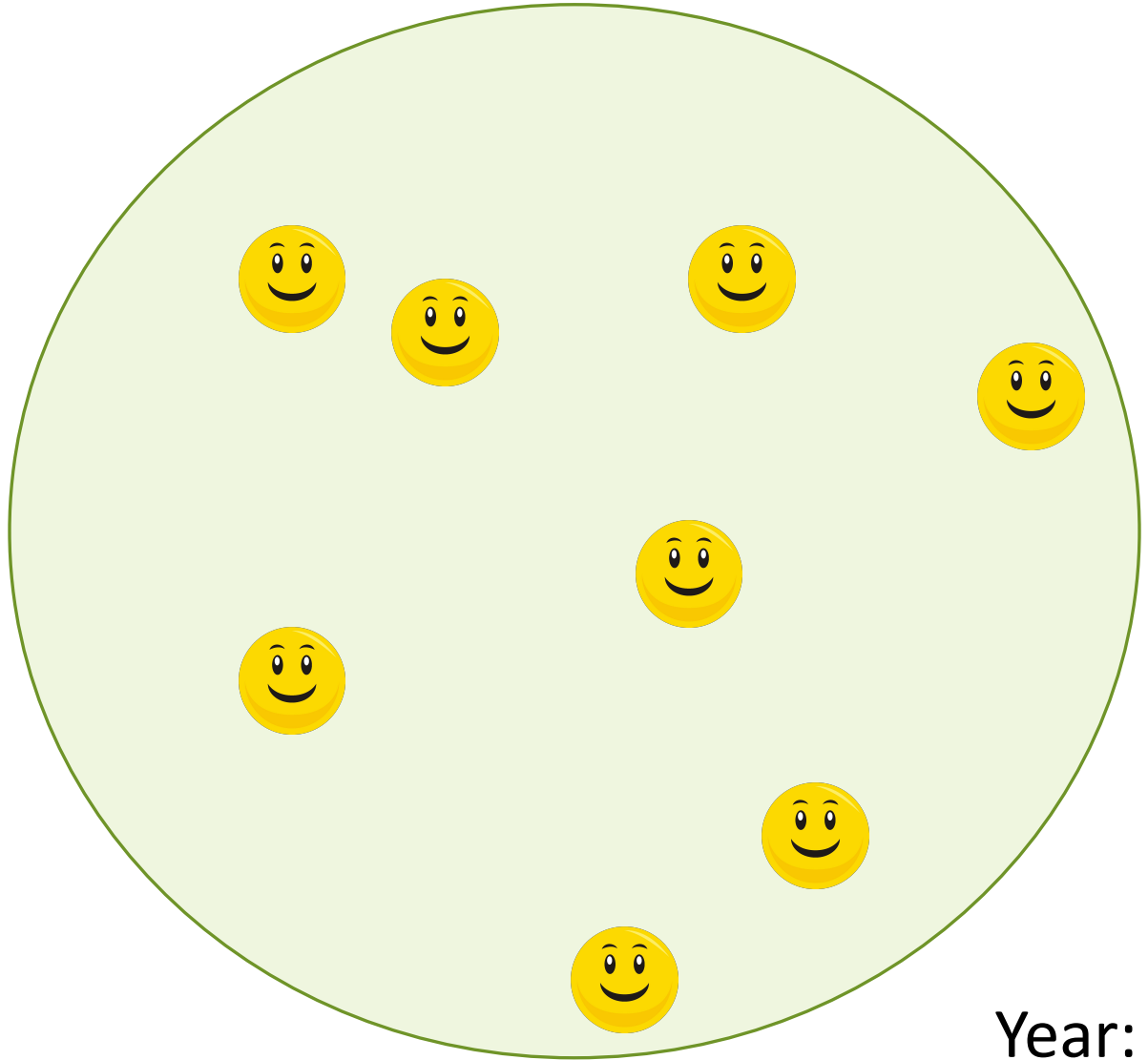
81



Year: 1930

# Population Circle

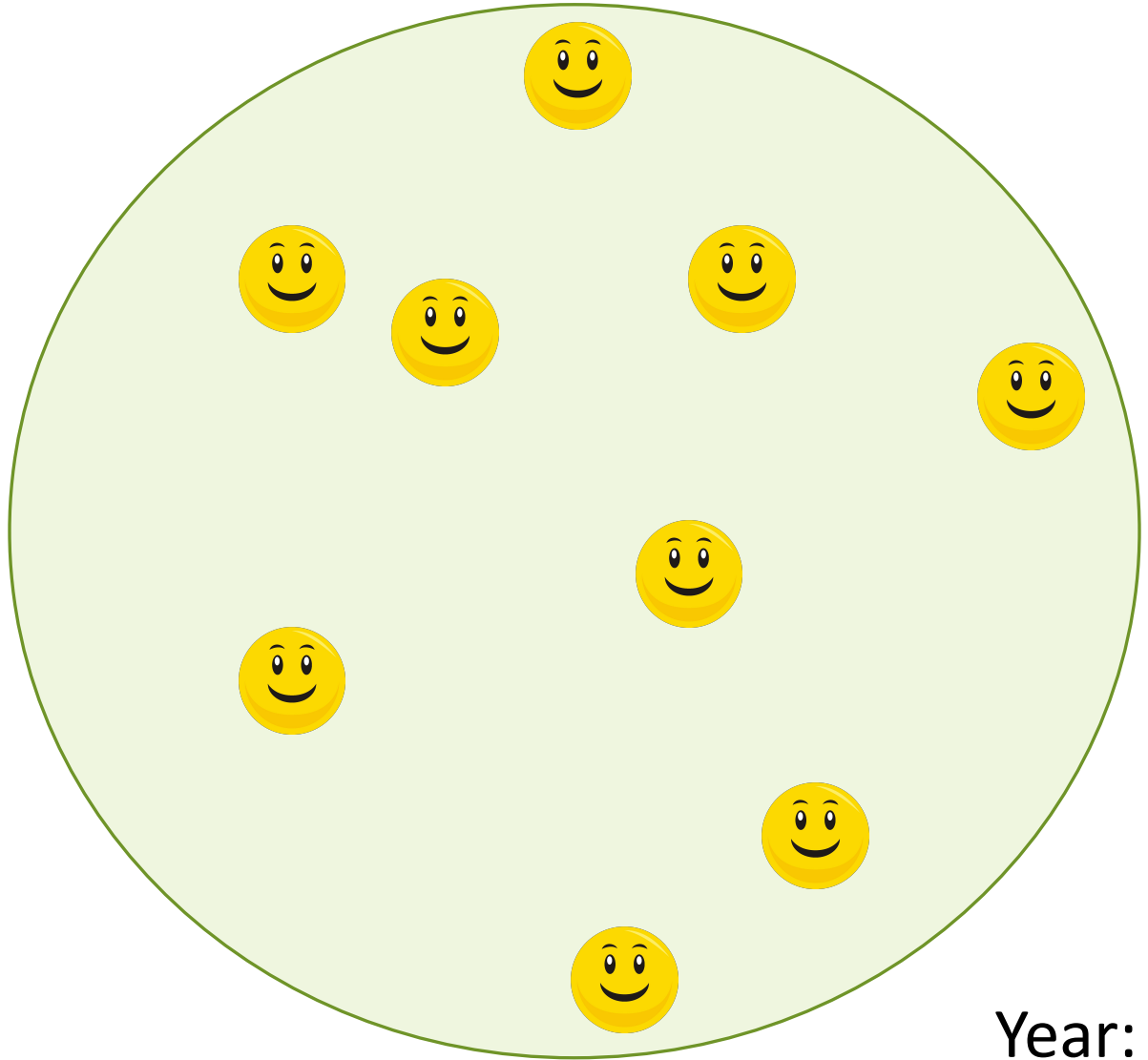
82



Year: 1935

# Population Circle

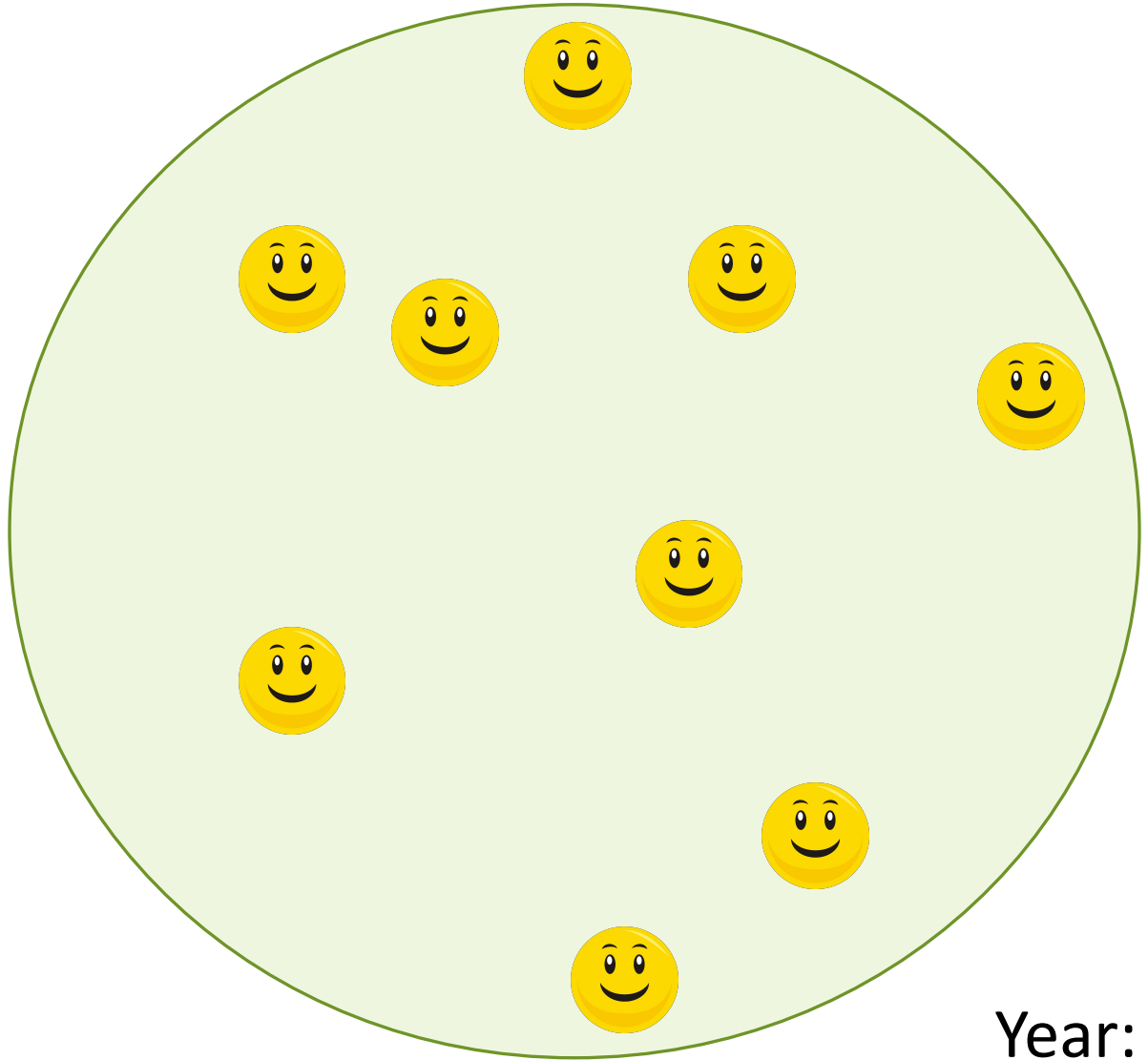
83



Year: 1940

# Population Circle

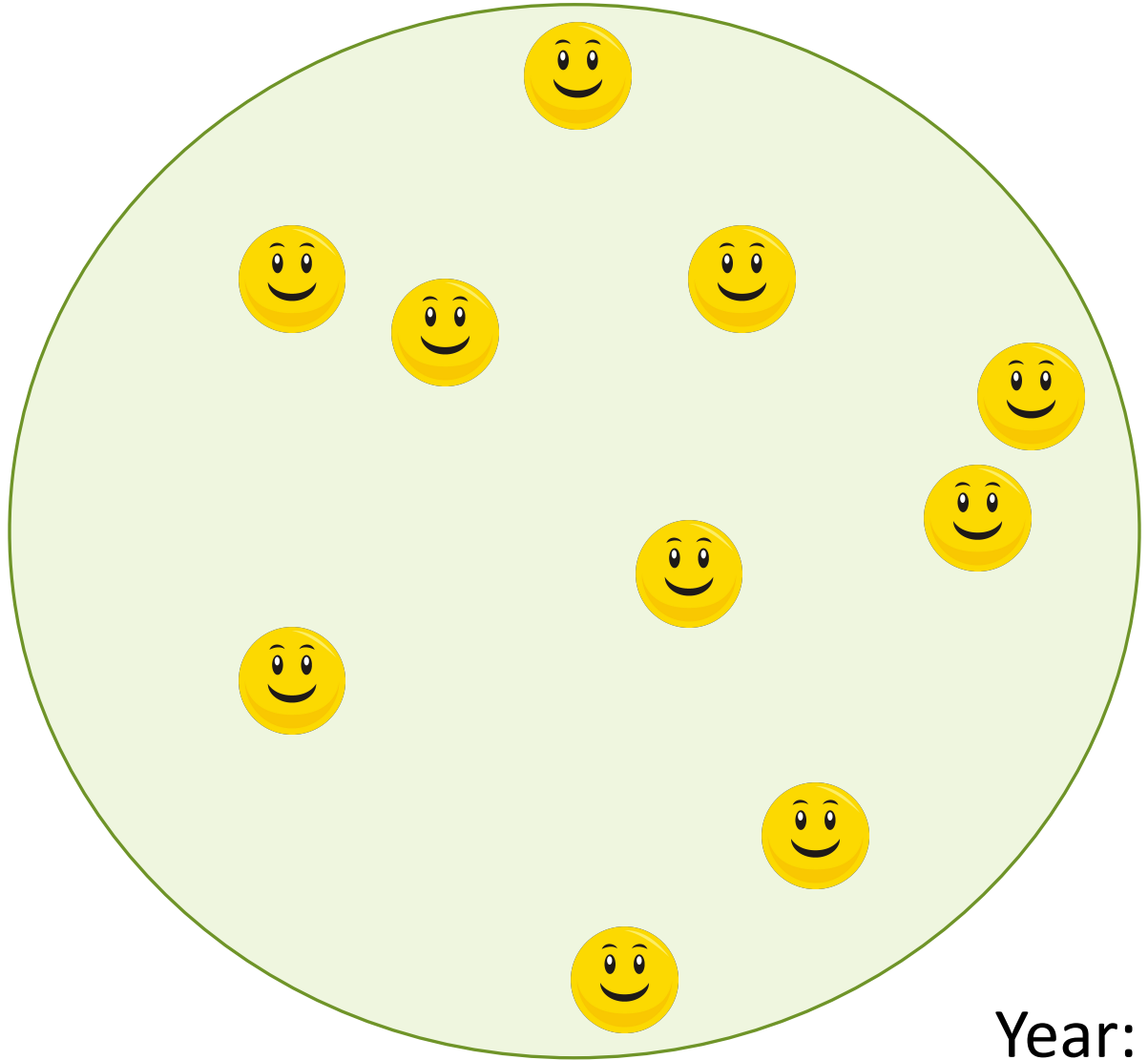
84



Year: 1945

# Population Circle

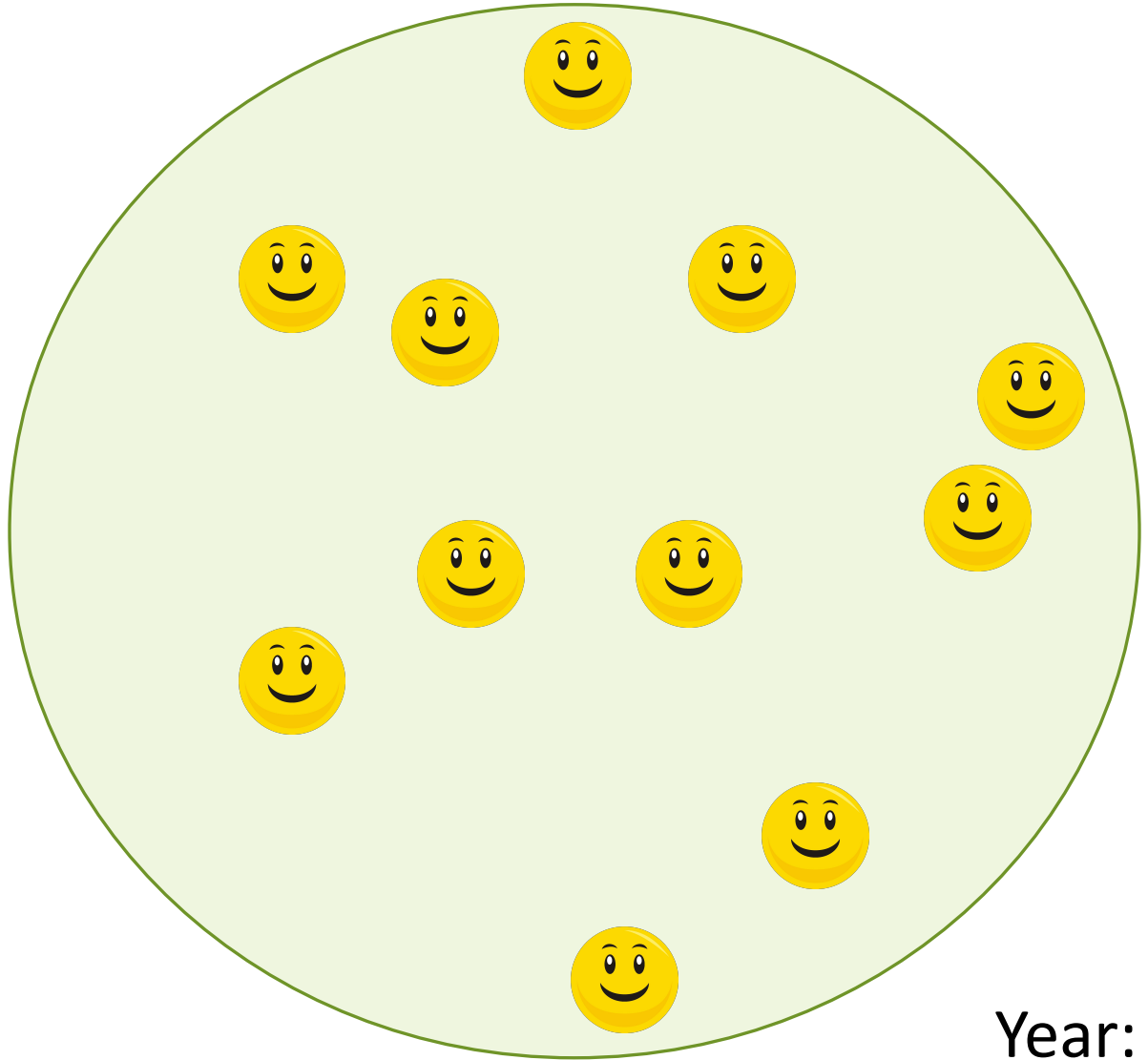
85



Year: 1950

# Population Circle

86

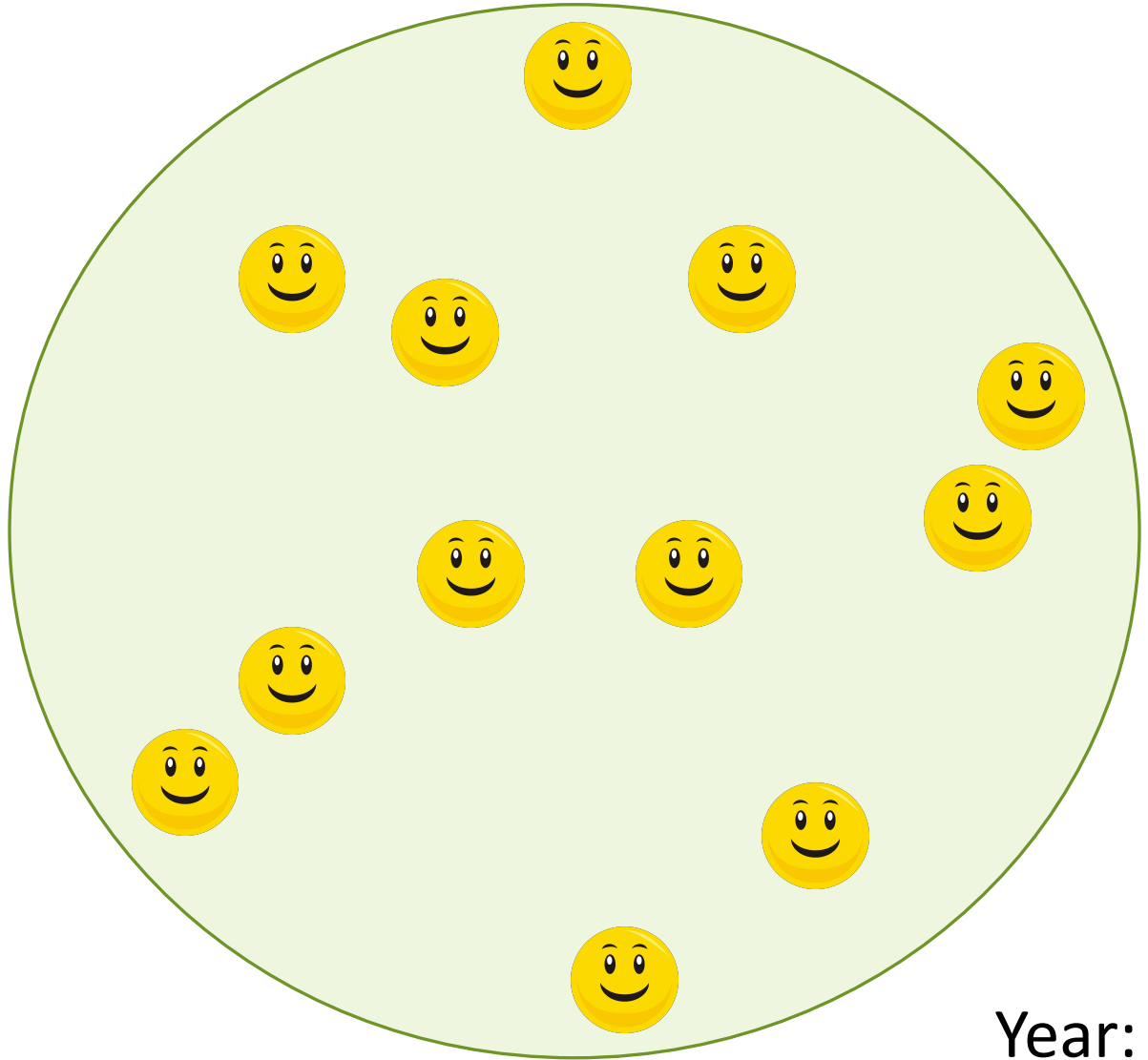


Year: 1955



# Population Circle

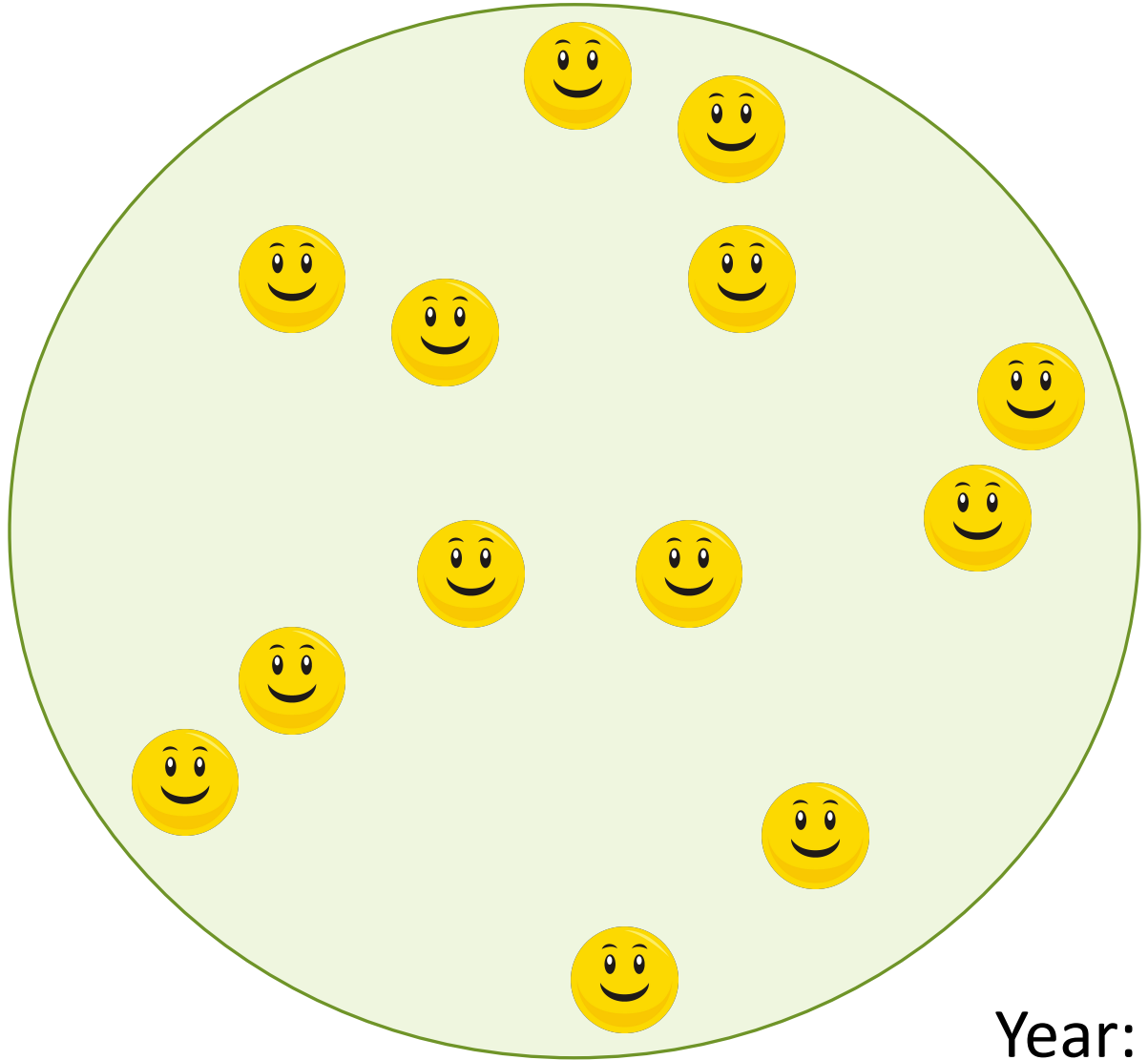
87



Year: 1960

# Population Circle

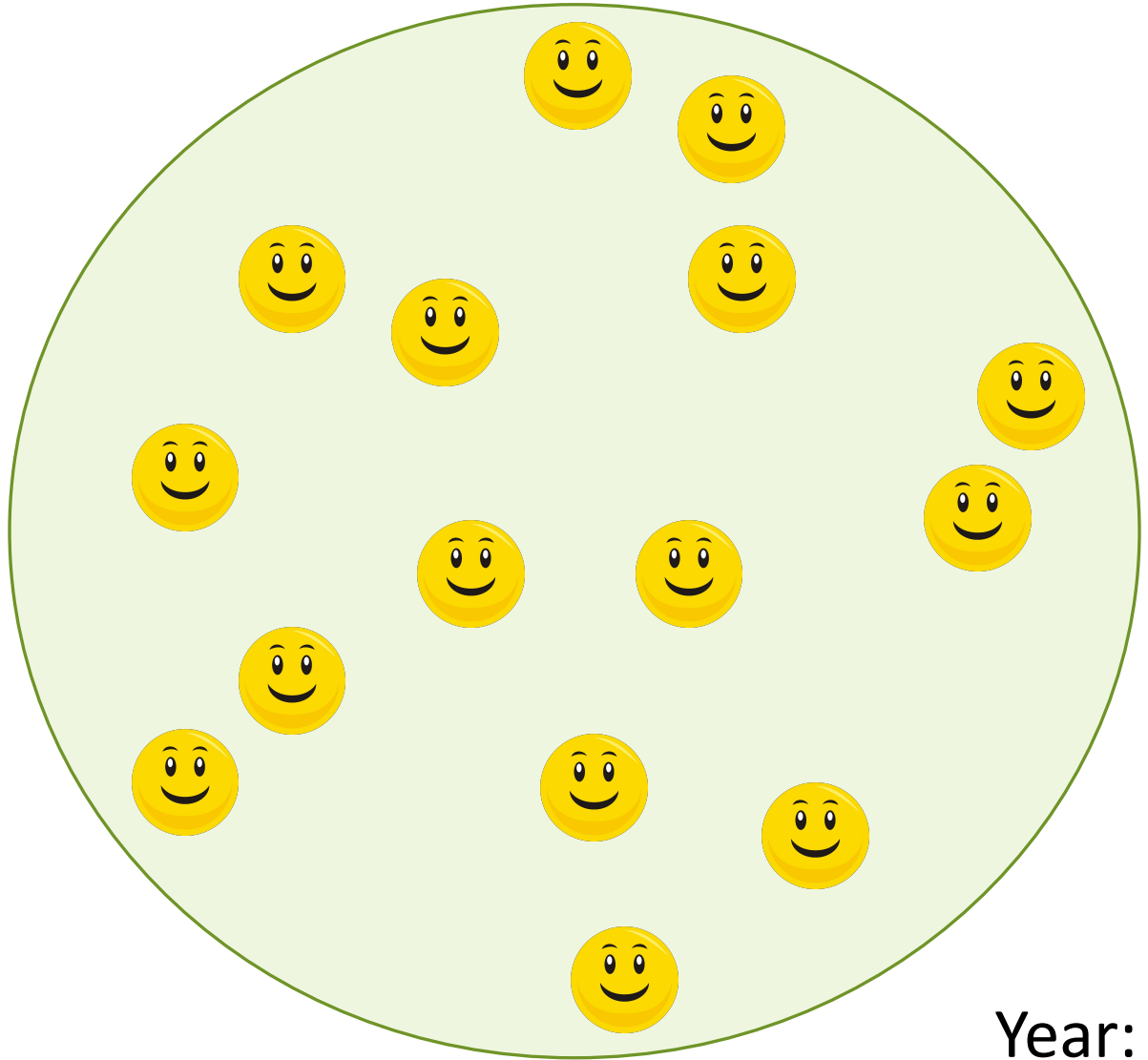
88



Year: 1965

# Population Circle

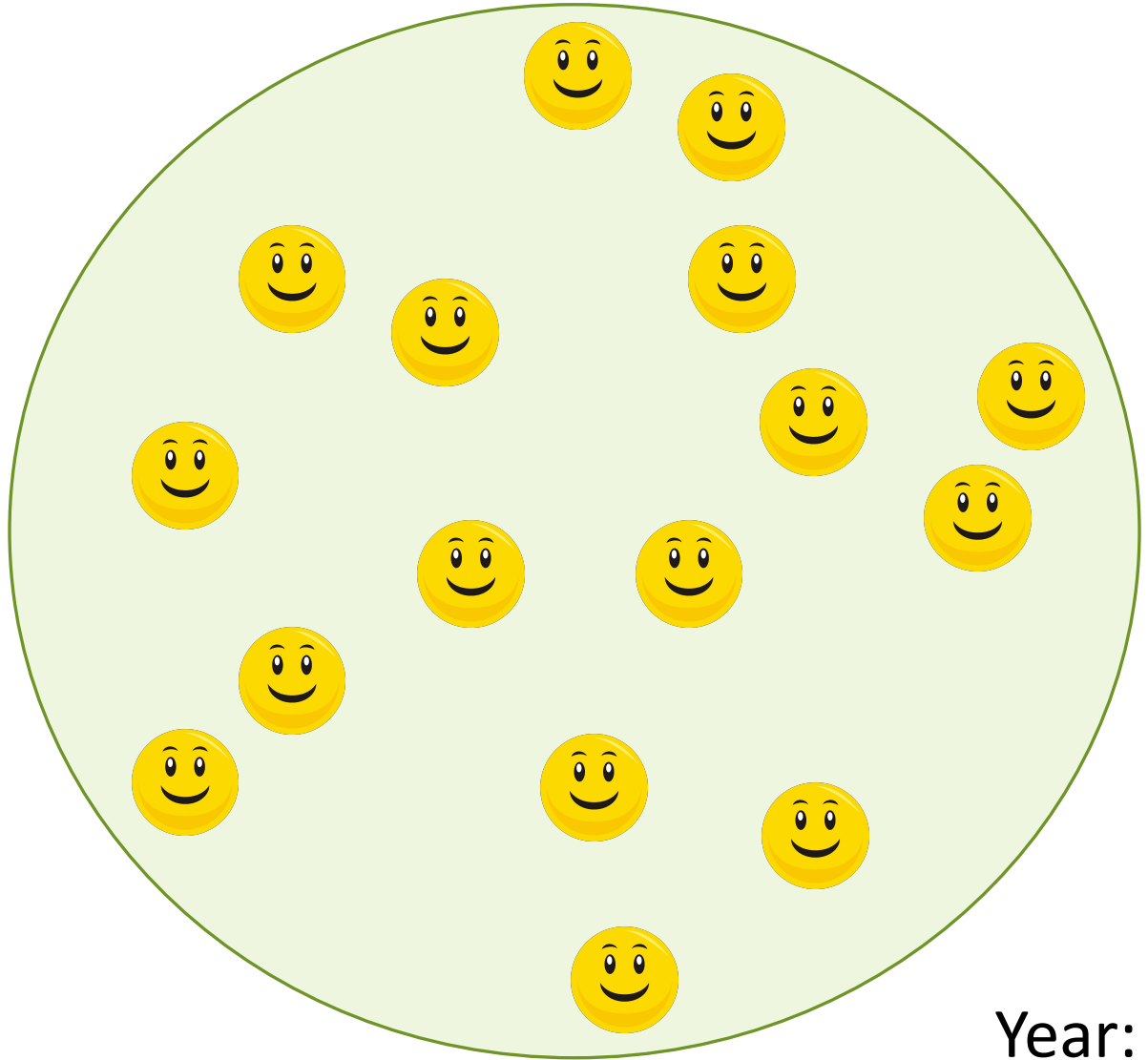
89



Year: 1970

# Population Circle

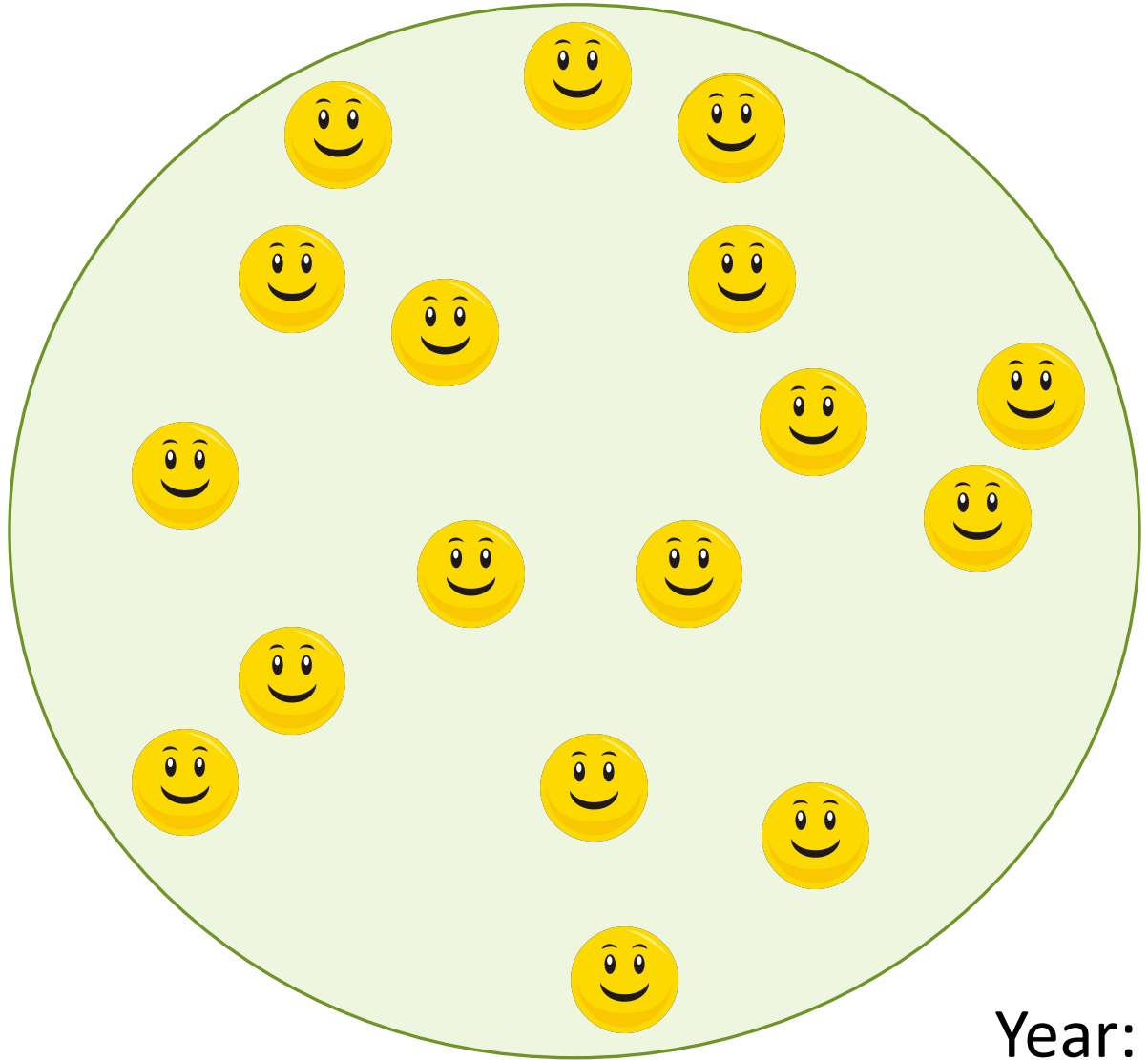
90



Year: 1975

# Population Circle

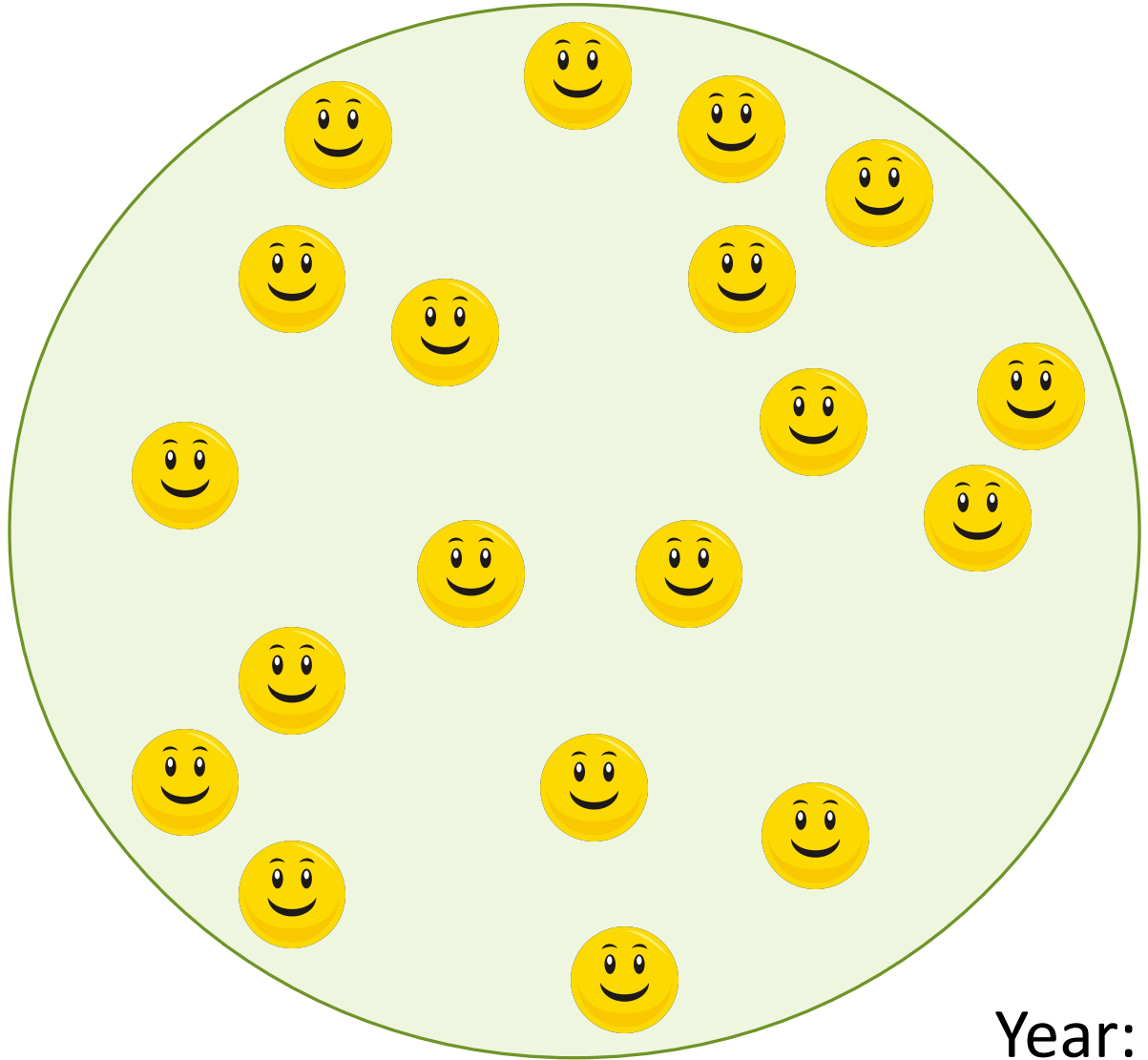
91



Year: 1980

# Population Circle

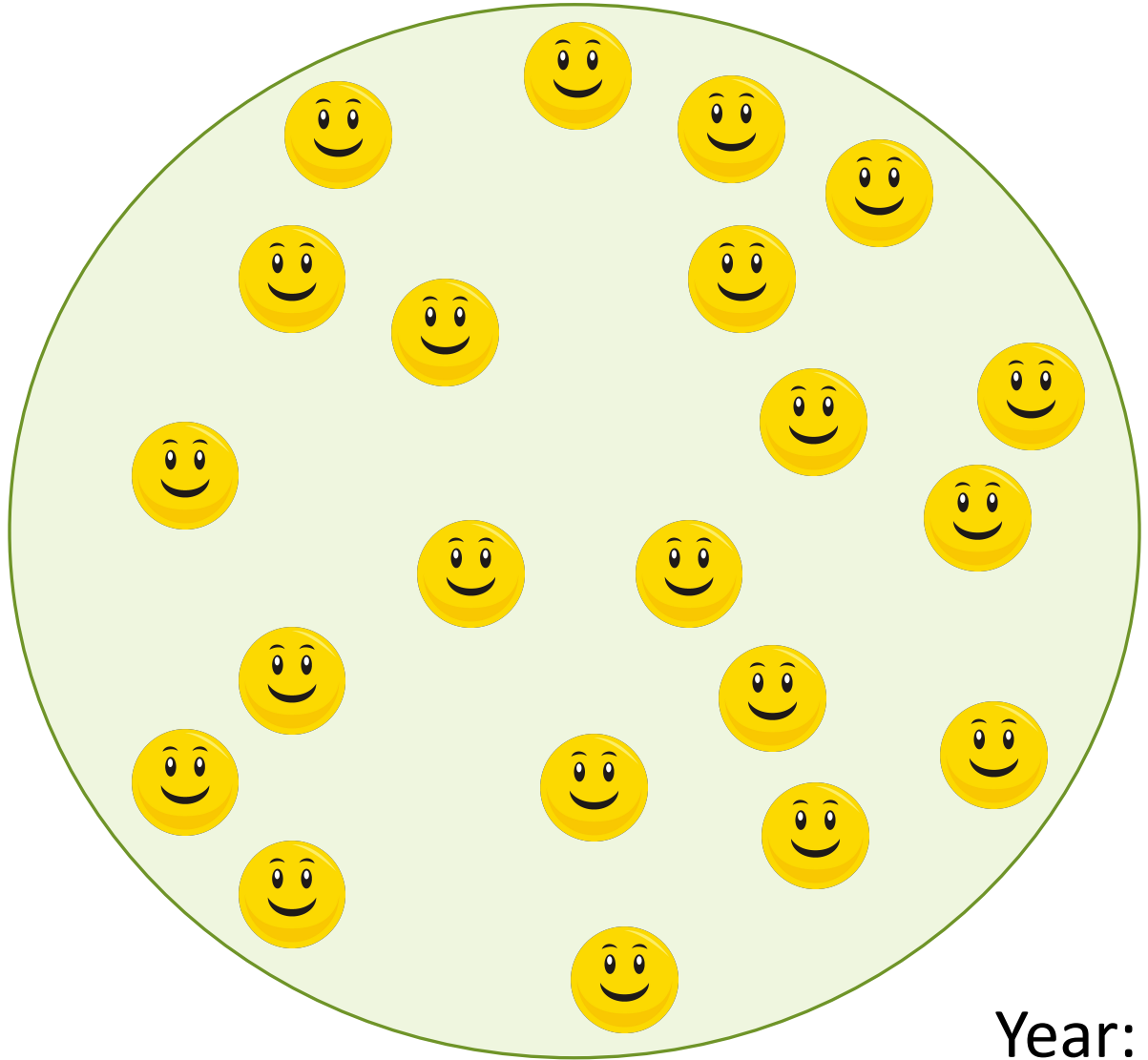
92



Year: 1985

# Population Circle

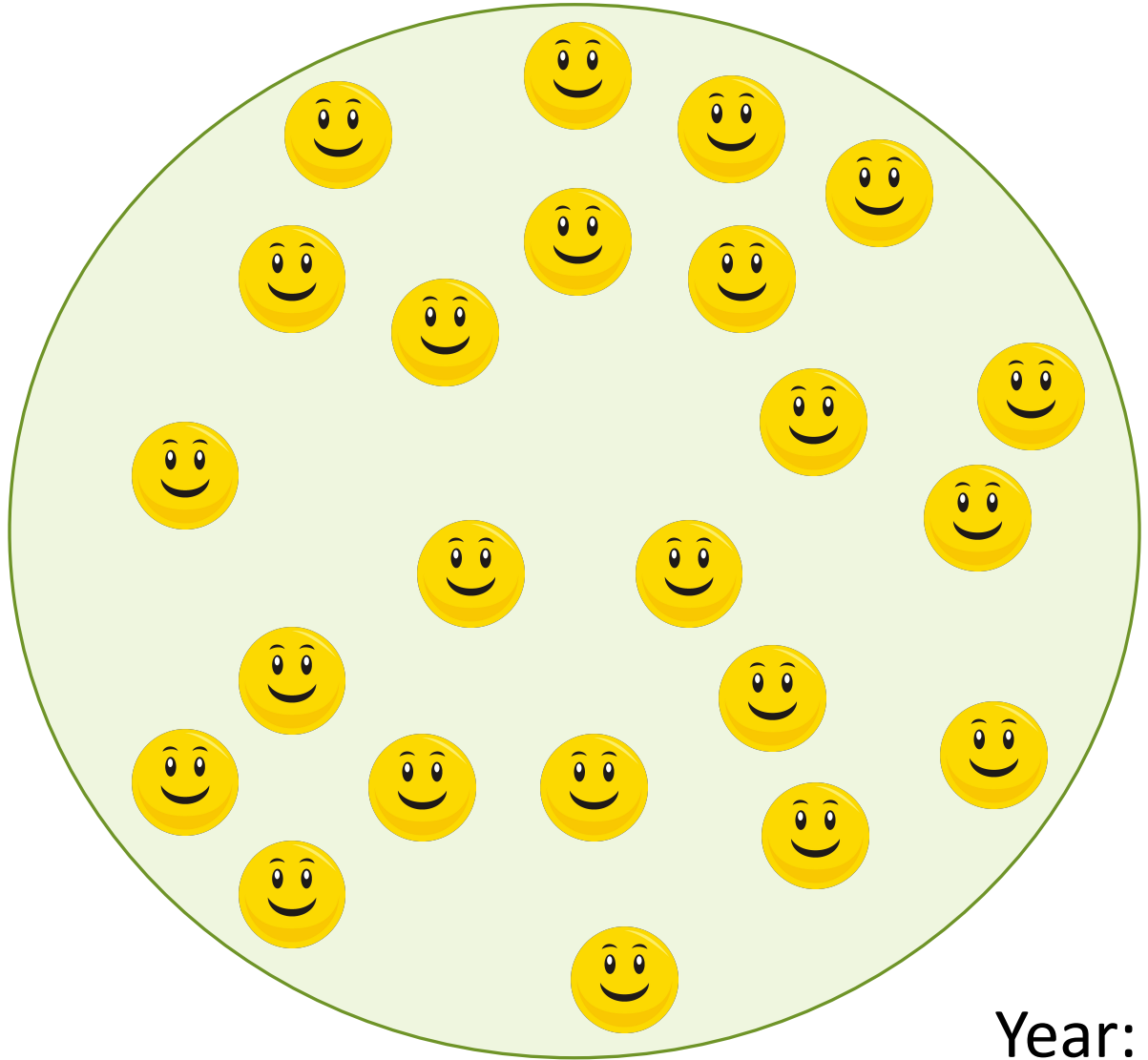
93



Year: 1990

# Population Circle

94

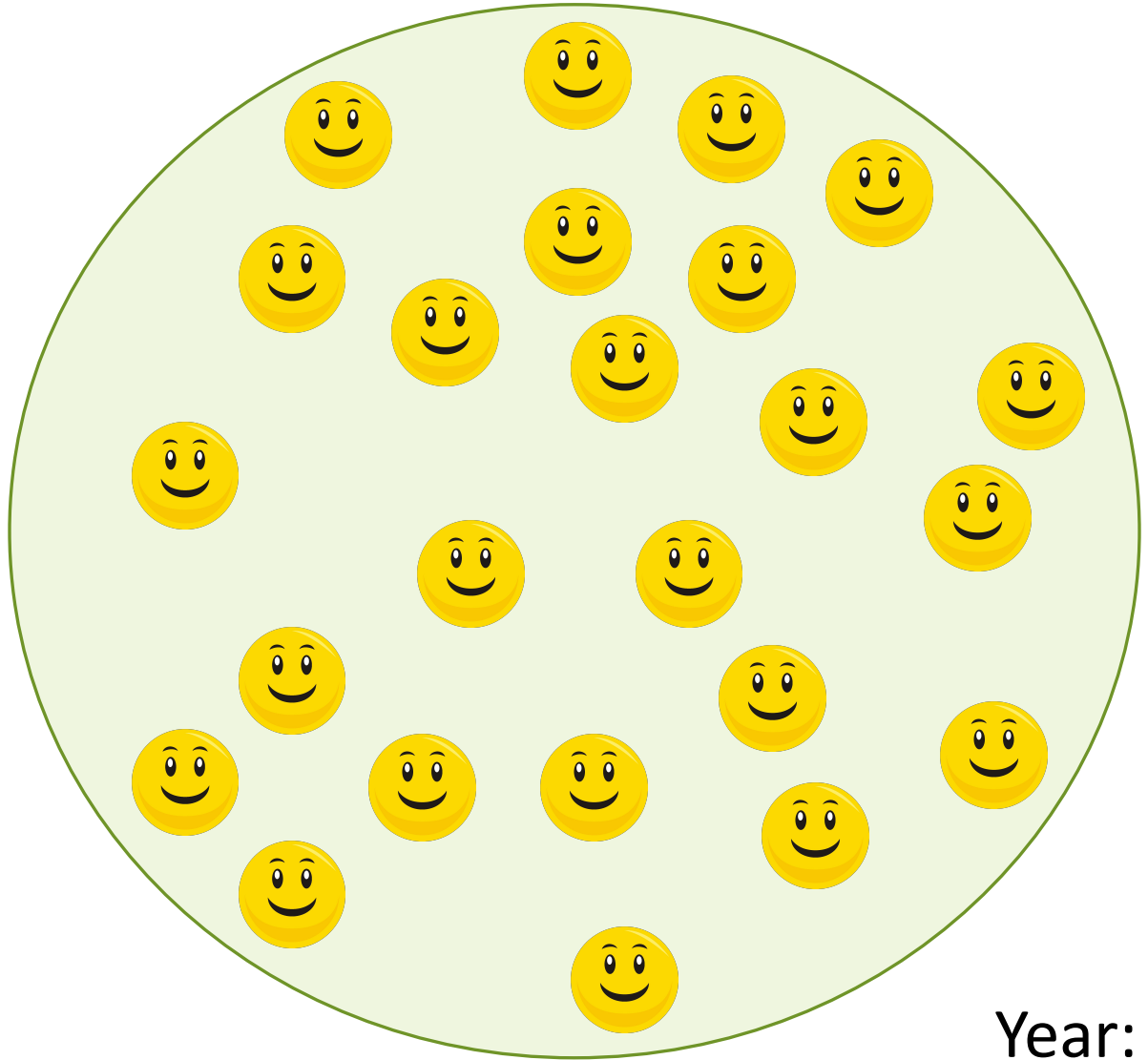


Year: 1995



# Population Circle

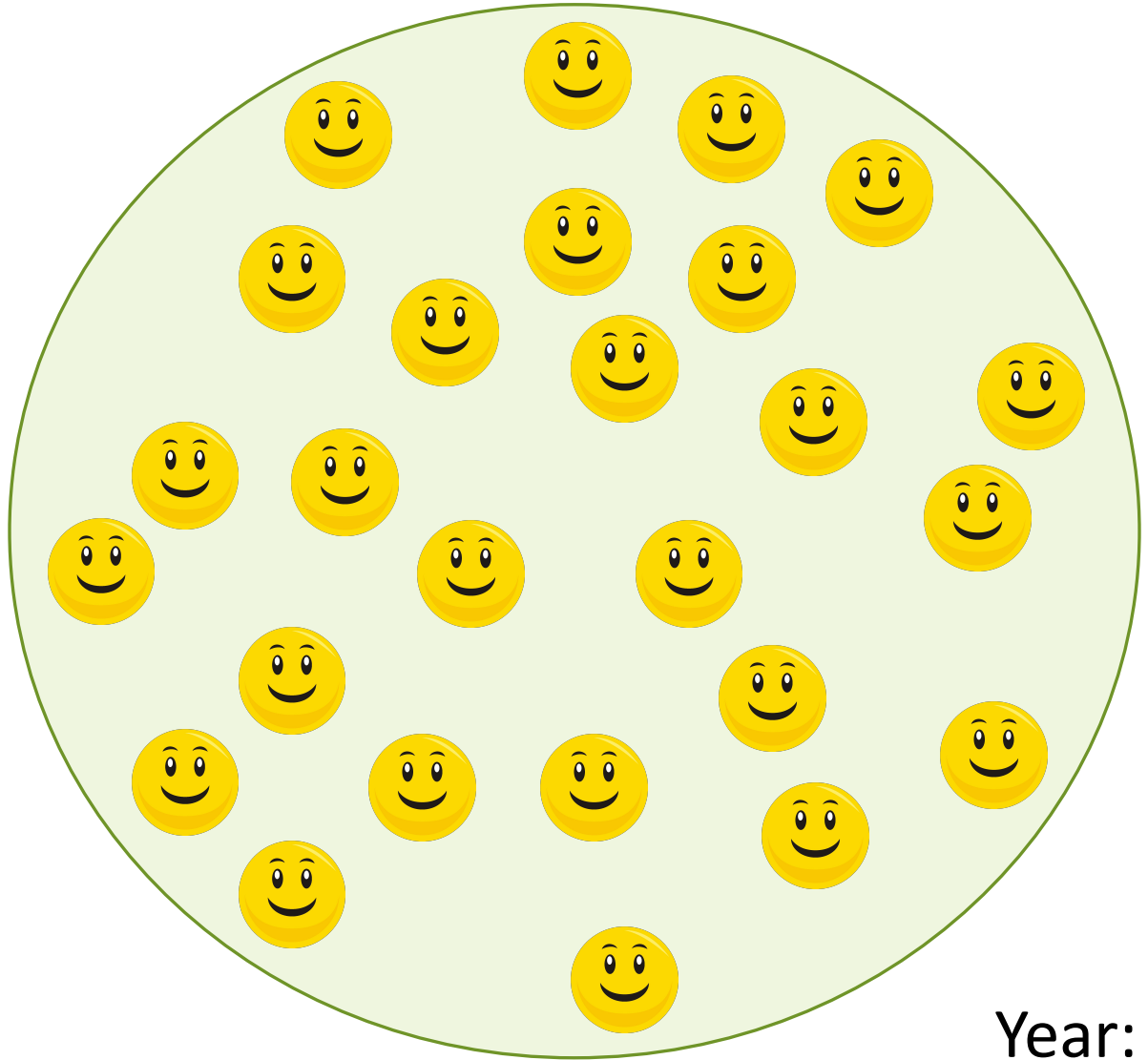
95



Year: 2000

# Population Circle

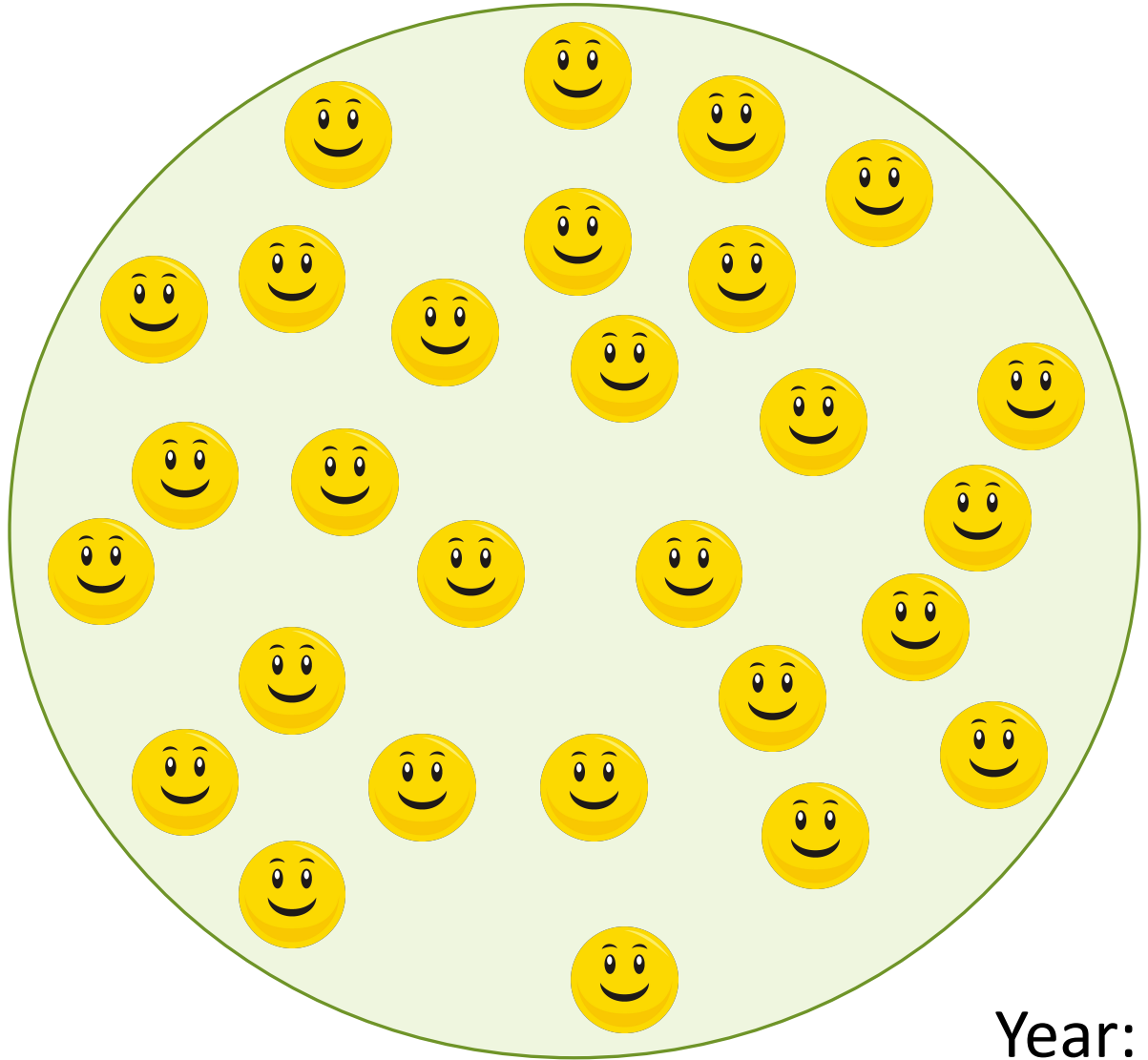
96



Year: 2005

# Population Circle

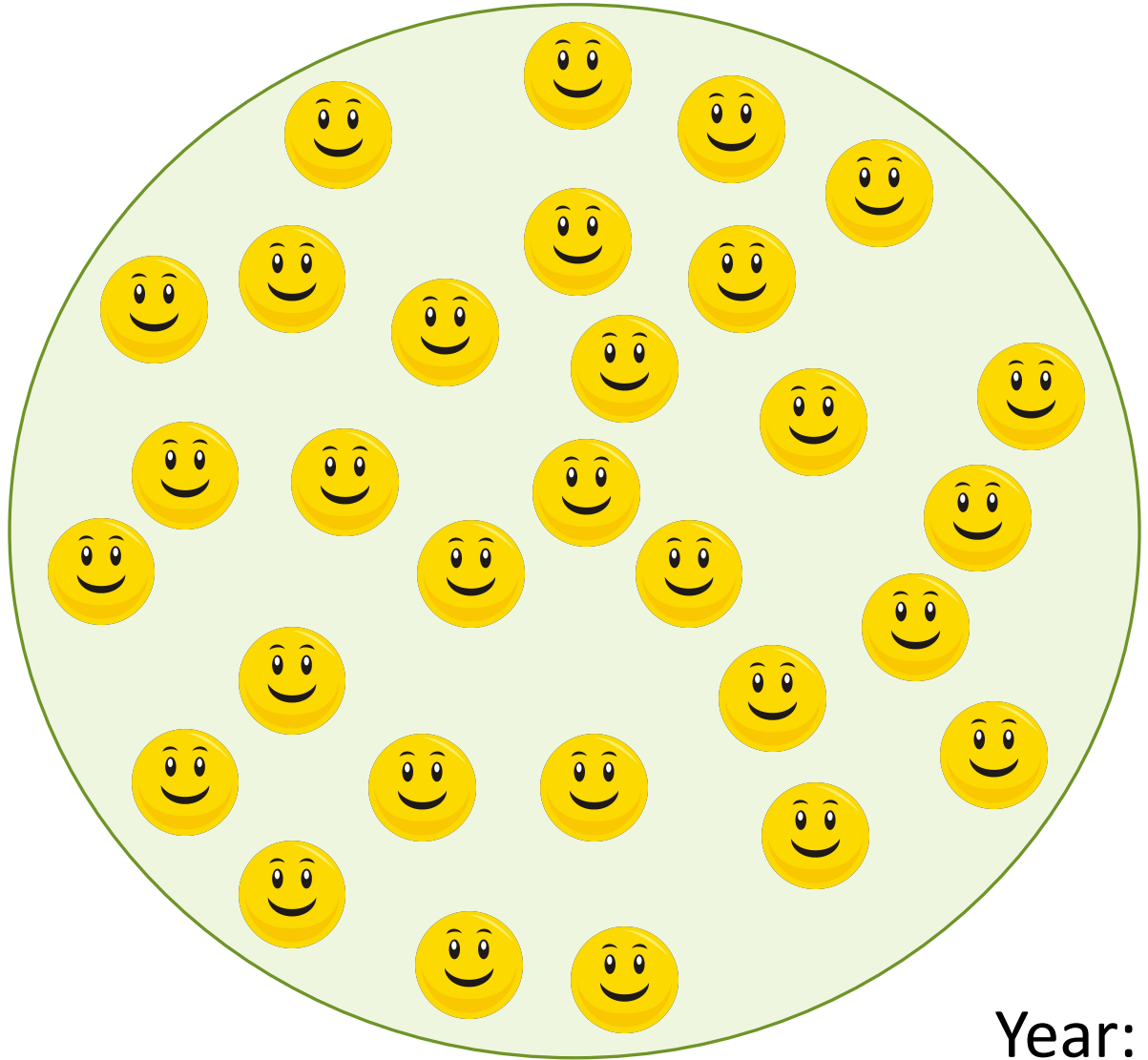
97



Year: 2010

# Population Circle

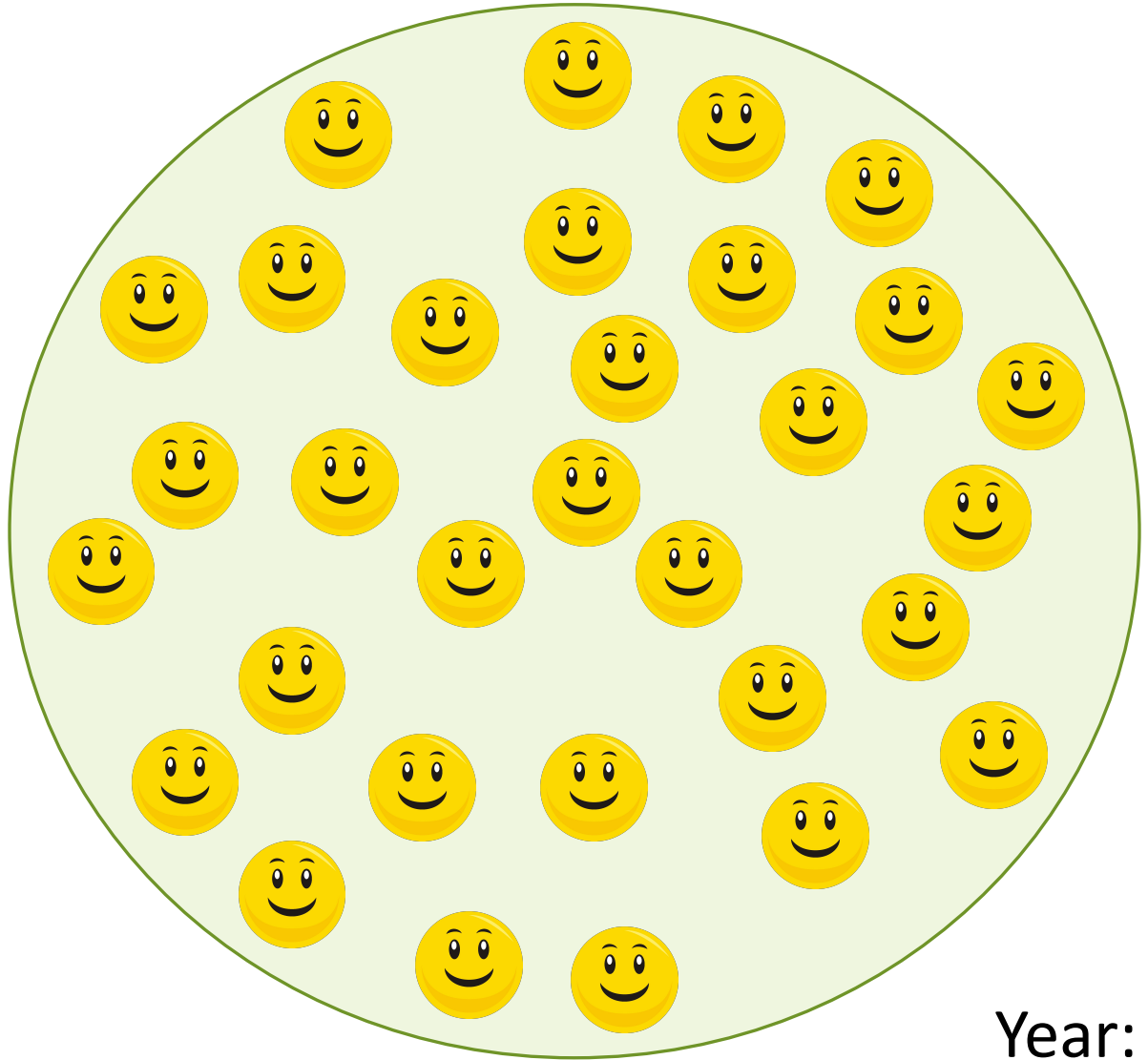
98



Year: 2015

# Population Circle

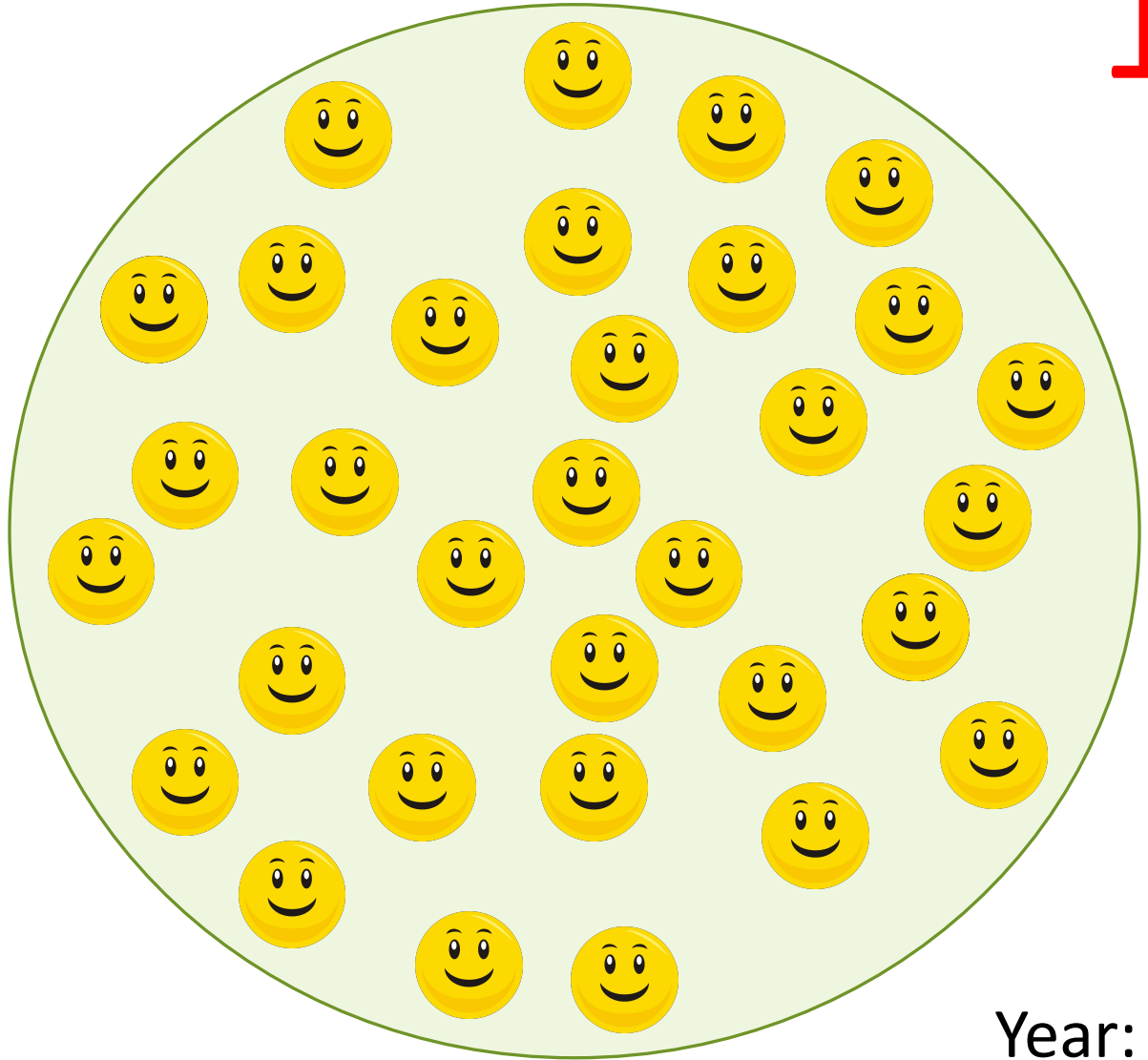
99



Year: 2020

# Population Circle

100



Year: 2025

# Discussion

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What did you observe about how our population changed over time?

How did it feel?

What challenges/advantages are associated with our growing population?



# World of 8 Billion Student Video Contest

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THIS MICROSITE HOUSES OUR STUDENT VIDEO CONTEST, FREE LESSONS, AND OTHER RESOURCES FOR TAKING ACTION FOR A MORE SUSTAINABLE WORLD:

[WWW.WORLDOF8BILLION.ORG](http://WWW.WORLDOF8BILLION.ORG)

POPULATION EDUCATION



# Student Video Contest - Overview

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Students have **1 minute** to define a **global challenge**, make the **population connection**, and propose **sustainable solutions**.

- Inspiring students in grades 6-12 (or international equivalent) to be change makers
- Over 80 students will be awarded prizes up to \$1,200.

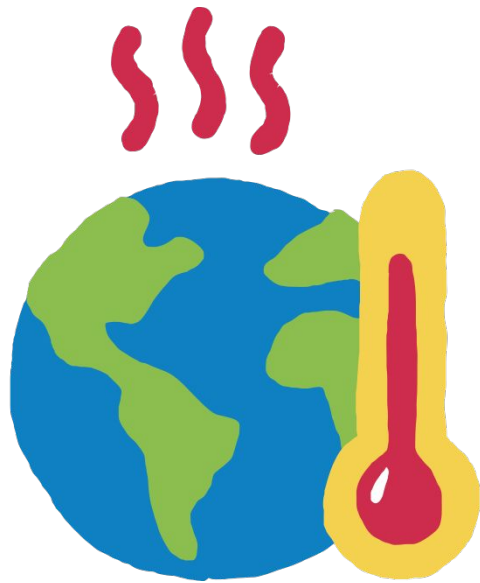


# Student Video Competition Stats



# This Year's Global Topics

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**Climate Change**



**Gender Equality**



**Waste**

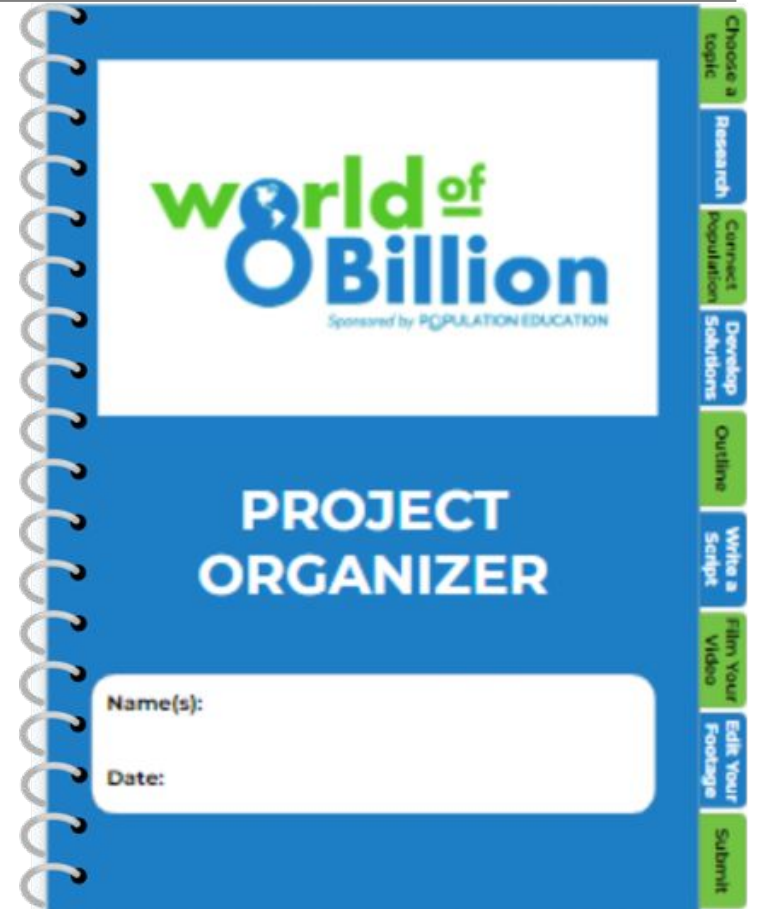
- Check out the [research backgrounders](#) for each of the global topics!

# Resources to Support Teachers & Students

## Video Project Organizer

1. Step-by-step guide for the contest
2. Plan out a timeline and group roles
3. Includes fillable graphic organizers and resources to support students along the way!

Check out the new interactive, [World of Billion Project Organizer](#).



# Resources to Support Teachers & Students

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- 1. [Lesson plans](#) to kick off the contest and for each global topic.
- 2. High resolution Quick Trip to 7.6 Billion Chart & related lessons.
- 3. Connections to AP classes, [Blogs with tips and additional content](#), and more!



GRADES: 6-8

CLIMATE CHANGE

## People and Climate Change: The Data Is In

Students interpret various forms of data (graphic, written, and visual) and identify relationships between population growth, greenhouse gas emissions, temperature rise, land ice melt, and sea level rise.

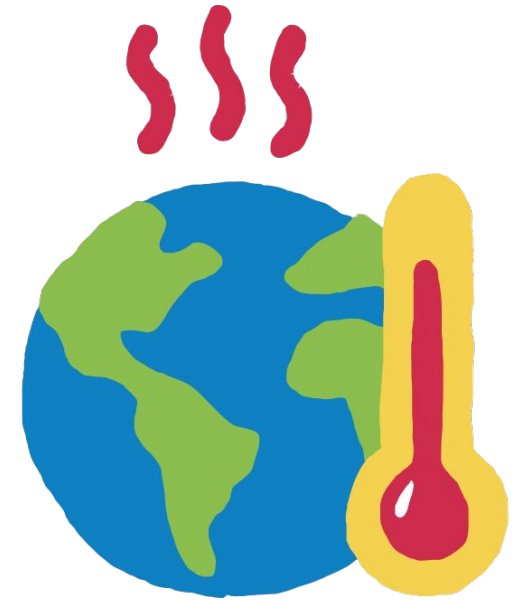


GRADES: 9-12

CLIMATE CHANGE

## Carbon Crunch

Students use a timeline to explore energy-related environmental issues through history then compare countries based on their CO2 emissions and their climate vulnerabilities.



# Carbon Crunch

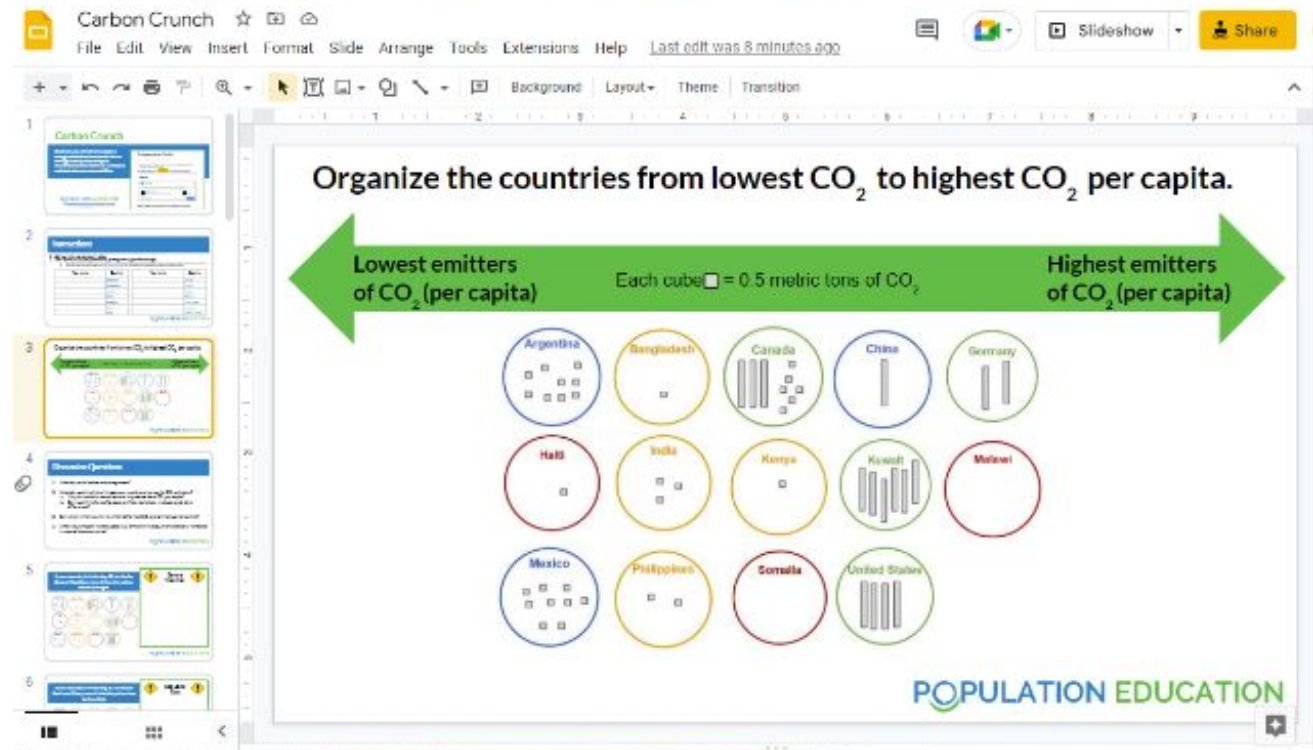
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STUDENTS USE A TIMELINE TO EXPLORE ENERGY-RELATED ENVIRONMENTAL ISSUES THROUGH HISTORY THEN COMPARE COUNTRIES BASED ON THEIR CO<sub>2</sub> EMISSIONS AND CLIMATE VULNERABILITIES.

POPULATION EDUCATION

# Join us digitally!

1. Click the **link in the chat** to play along.
2. Or type this link into your internet browser:  
<https://population.education/PopConn>
3. Or just hang out here and watch the action on Zoom!





# Lesson for Life

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STUDENTS READ AND DISCUSS A SHORT CONVERSATION BETWEEN TWO ETHIOPIAN GIRLS ABOUT ATTENDING SCHOOL AND READ AND ANALYZE POEMS ABOUT GIRLS' EDUCATION.

POPULATION EDUCATION



# Part 2 Instructions

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Listen to two poems related to girls education.

Eunice's Dream: A Poem from Kibera School for Girls, by Eunice Akoth

The Power of Firsts, by Amanda Gorman



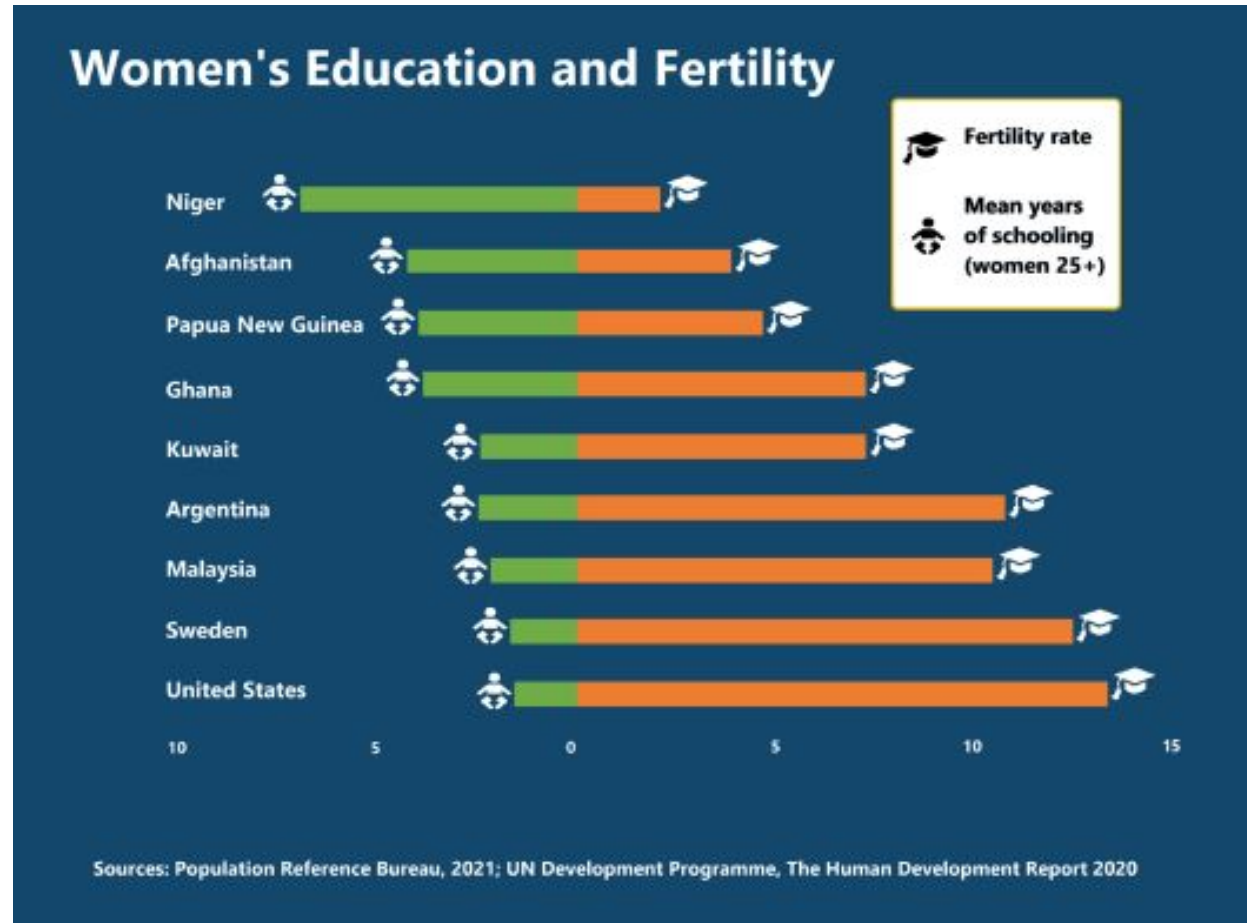
# Questions

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1. What are the similarities and differences between both poems?
2. Explore the following excerpt from “The Power of First” – “power unfurls in a girl at school”? What does this mean to you? What does “power” have to do with education?
3. **After listening to Eunice recite her poem, how would you describe her dream? How can education help Eunice achieve her dream?**
4. How have your circumstances impacted your ability to achieve a goal? What did you do? How is your experience similar or different?

# Explore Global Implications

Indirect relationship  
between fertility rate  
and years of schooling





# Trash Trouble in Paradise

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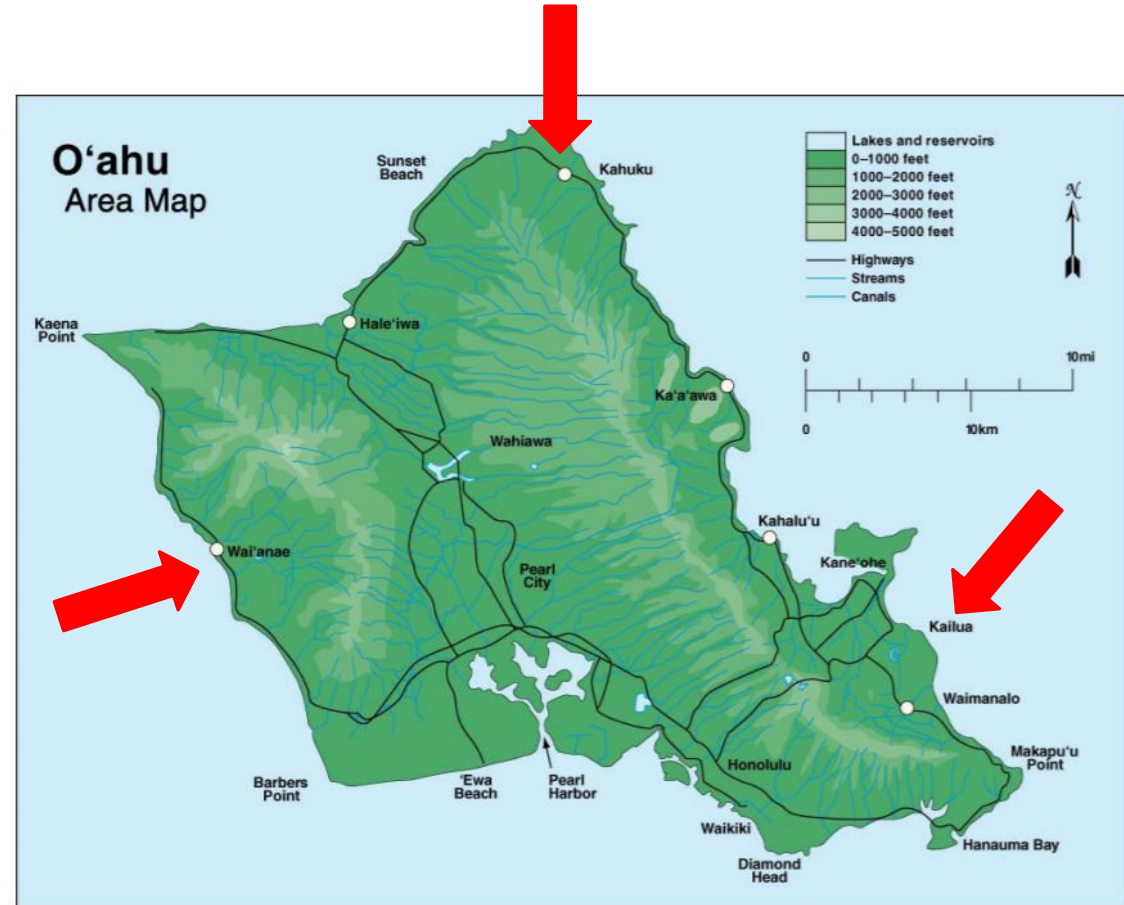
ROLE PLAYING A CITY COUNCIL MEETING, STUDENTS WEIGH VARIOUS REAL-WORLD ECONOMIC, SOCIAL, AND ENVIRONMENTAL FACTORS WHEN SITING A LANDFILL ON THE HAWAIIAN ISLAND OF O'AHU.

POPULATION EDUCATION

# Case Study of O'ahu's Landfill Question

O'ahu's population is growing, and the current landfill is near capacity.

**Where should the next landfill go?**



# Community Profiles and Demographic Data

Population Basics			
	Wai'anae	Kahuku	Kailua
Total population, April 2010	13,177	6,138	38,635
Population density, April 2010	2,459/mi <sup>2</sup>	4,584 /mi <sup>2</sup>	4,976 /mi <sup>2</sup>
Persons under age 5, April 2010	9.8%	6.1%	5.4%
Persons under age 18, April 2010	32.5%	22.7%	20.5%
Persons age 65 years+, April 2010	9.1%	5.6%	16.4%

Income and Education Levels			
	Wai'anae	Kahuku	Kailua
Median household income (in 2014 dollars), 2010-2014	\$68,348	\$81,948	\$104,911
% Persons in poverty	27.5%	11.0%	5.8%
High school graduate or higher, percent of persons age 25 years+, 2010-2014	83.9%	97.9%	95.3%
Bachelor's degree or higher, percent of persons age 25 years+, 2010-2014	8.3%	44.3%	46.2%

## Community Profile: Kahuku (kah-hoo-koo)



Turtle Bay Resort, Kahuku, Hawaii.



Kahuku Shrimp Wagon.

Even if you've never been to Hawai'i, you may have seen Kahuku – especially its Turtle Bay Resort, which has been featured as the setting for a number of TV shows and movies. While the resort brings a lot of tourists and development, it's also been taking part in recent conservation efforts. The resort installed solar panels on its roof, buys local and organic ingredients for its restaurants, and funds a program that recycles Styrofoam to make surfboards. Near the resort, several World War II-era runways have been converted to golf courses.

Beyond the resort, several family-owned farms trace back for generations. Kahuku is also home to beaches beloved by surfers and to the James Campbell National Wildlife Refuge, which protects the habitats of several native waterbirds, green sea turtles, and the endangered Hawaiian monk seal. Many consider Kahuku to be a quiet town that hearkens back to the "Old Hawai'i" days before the island's tourism industry rapidly grew.

# Write and Debate a Proposal

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Under what conditions would your community be willing to accept the landfill?

What do you expect the council to provide in exchange?

Identify the benefits to your community that could offset the challenges associated with having the landfill.



**Outline your plan in detail and be prepared to defend its components.**

# Ways to Get Involved with PopEd!

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1. Share the contest within your networks.
  - a. [Digital Flyer](#)
2. Expert in one of this year's global topics?
  - a. Think about becoming a judge for this year's contest!
    - i. Email - [worldof8billion@populationconnection.org](mailto:worldof8billion@populationconnection.org)
3. Know an stellar teacher/professor?
  - a. Let them know about our [trainer's network](#).
4. Keep updated with what is happening with PopEd.
  - a. By signing up for our [Newsletter](#).



# Thank you!

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*Questions? Email: [engage@popconnect.org](mailto:engage@popconnect.org)*

Barbara Huth  
Online Learning Coordinator

Laura Short  
Education Program Associate

POPULATION EDUCATION