POPULATION MODULE OVERVIEW

SKILL FOCUS
Spatial Relationships, Data Analysis, Scale Analysis

Spatial Relationships: Describe spatial patterns and networks, and explain a likely outcome in a geographic scenario using geographic concepts, processes, models, or theories.

Data Analysis: Explain patterns and trends in maps and in quantitative and geospatial data to draw conclusions.

Scale Analysis: Identify the scale of analysis presented by maps, quantitative and geospatial data, images, and landscapes

CONTENT
Enduring Understanding SPS-2

Changes in population have long- and short-term effects on a place's economy, culture, and politics.

 Topic 2.9. Aging Populations

 Topic 2.7. Population Policies

DAY 1

How does scale affect our analysis of geographic trends?

CLASS ACTIVITY
Identify and Analyze Demographic Trends and Scales of Analysis
Students will identify and analyze demographic statistics at different scales of analysis and work collaboratively to predict challenges presented by those trends.

AP SKILL ALIGNMENT
Skill Category 2.A. Describe spatial patterns, networks, and relationships.

Skill Category 3.C. Explain patterns and trends in maps and in quantitative and geospatial data to draw conclusions

Skill Category 5.A. Identify the scales of analysis presented by maps, quantitative and geospatial data, images, and landscapes

DAY 2

What challenges are presented by an aging population?

CLASS ACTIVITY
Analyzing Population Policies in South Korea
Students will identify and analyze antinatalist and pronatalist population policies in South Korea and apply their knowledge to explain why a society may want to promote or discourage population growth.

AP SKILL ALIGNMENT
Skill Category 2.C. Explain a likely outcome in a geographic scenario using geographic concepts, processes, models, or theories.

Skill Category 3.E. Explain what maps or data imply or illustrate about geographic principles, processes, and outcomes.

DAY 3

Assessment

CLASS ACTIVITY
Concept Mapping and AP-Aligned Assessment
Students will connect vocabulary and concepts via a concept-mapping activity and then demonstrate understanding as they answer five Multiple Choice Questions (MCQs) and one Free Response Question (FRQ) with two stimuli.

AP-ALIGNED ASSESSMENT
Free-Response Question (FRQ) and Multiple Choice Questions (MCQs)

POPULATION MODULE SOURCES

DAY 1

Stimulus Type	Description	Page
Population Pyramid	East Asia Population, 2020	28
Population Pyramid	Projected East Asia Population, 2050	28
Data Chart	East Asia Demographic Indicators	28
Population Pyramid	Population of South Korea, 2020	29
Population Pyramid	Projected Population of South Korea, 2050	29
Data Chart	South Korea Demographic Indicators	29
Map	Average Projected Annual Rate of Population Change (%), World Map, 2020-2025	30
Population Pyramid	World Population, 2020	31
Population Pyramid	Projected World Population, 2050	31
Data Chart	World Demographic Indicators	31
Graph	Fertility Rates, Selected South Korea Provinces, 2017	32
Map	Ratio of Elderly Population in South Korea by Province, 2010	32
Population Pyramid	Seoul, 2010	32
Population Pyramid	Jeollanam-do, 2010	32

DAY 2

Stimulus Type	Description	Page
Population Pyramids	South Korea, 1965, 1975, 1995, 2015	39
Poster	Antinatalist South Korean Government Poster	43
Poster	Antinatalist South Korean Government Poster	43
Text Excerpt	South Korea's Child Care Policy	43
Graph	South Korea's Total Fertility Rate, 1960-2018	44
Text Excerpt	Field Note About Changing Family Sizes in Korea	44
Text Excerpt	Korea Endorses Loop for Birth Control	44
Text Excerpt	Government Support for Housing For Families With 3+ Children	45
Poster	Antinatalist South Korean Government Poster	45
Poster	Antinatalist South Korean Government Poster	45
Graph	Percentage of South Korean Women Using Contraception (Ages 15-49)	46
Text Excerpt	South Korea's Saero-Maji Pronatalist Plan	46

DAY 3

Stimulus Type	Description	Page
Population Pyramid	Population of South Korea, 2020	58
Text Excerpt	"U.S. Homes Problematic for Aging Population"	58
Graph	Total Fertility Rate of South Korea Since 1984	58
Map	Average Projected Annual Rate of Population Change (%), World Map, 2020-2025	59
Population Pyramid	Projected East Asia Population, 2050	59

DAY 2
Based on a 60-minute class

What challenges are presented by an aging population?

AP CURRICULUM FRAMEWORK REFERENCE

Enduring Understanding
SPS-2. Changes in population have long- and short-term effects on the economy, culture, and politics of places.
Topic 2.7. Population Policies

HUMAN GEOGRAPHY SKILLS

Spatial Relationships: Analyze geographic patterns, relationships, and outcomes in applied contexts.
Skill Category 2.C. Explain a likely outcome in a geographic scenario using geographic concepts, processes, models, or theories.

Data Analysis: Analyze and interpret quantitative geographic data represented in maps, tables, charts, graphs, satellite images, and infographics.
Skill Category 3.E. Explain what maps or data imply or illustrate about geographic principles, processes, and outcomes.

OVERVIEW

Students will identify and analyze antinatalist and pronatalist population policies in South Korea using population pyramids and other data. Students will also apply their knowledge to explain why a society may want to promote or discourage population growth.

MATERIALS NEEDED:

- Butcher paper or its equivalent (chart paper, extra-large sticky notes)
- Markers or colored pencils
- Day 2 Handouts
    - Day 2 Student Handout (1 per student) (p. 39)
    - Documents (pp. 43–46)
    - Document Analysis Handout (1 per student) (p. 47)
    - Group Discussion Handout (1 per group) (p. 48)
- Teacher Answer Key for the Documents (p. 49)

SEQUENCE OF INSTRUCTION

CLASS ACTIVITY 1 OF 4: WARM-UP / INTRODUCTION

WARM-UP/INTRODUCTION (15 MINUTES): POPULATION PYRAMID SORT

ACTIVITY 1

Students will sort population pyramids for the Republic of Korea in chronological order to reinforce what they learned from Day 1.

ACTIVITY PROCEDURE

▶ Distribute the Day 2 Student Handout to all students.

▶ Group students in groups of 3 to 4. Teachers may wish to create the groups as mixed-performance groups of 1 student who tends to struggle with material, 1 to 2 students who usually understand the basics but may struggle with more complex concepts, and 1 student who typically masters concepts.

▶ South Korea, like many societies, transitions from high birth rates and high death rates to low birth rates and low death rates over time.

▶ Have student groups place the four population pyramids in chronological order using the Day 2 Student Handout. Ask students to explain their rationale for their order.

> **TEACHING TIP**
> Teacher Answer Key and Explanations for Population Pyramid Order: **B - C - D - A**

1. PYRAMID B, 1965
  ▷ The pyramid has a wide base representing a high percentage of children.

  ▷ Fewer women than men in many age groups may be attributed to these two main factors:

  • Preference for males

  • Under Japanese colonial administration (1910-1945), it is estimated that between 100,000 and 200,000 Korean women were sent to Japan as "comfort women"

  ▷ There are fewer men aged 35-44 in particular, due to the Korean War (which began in 1950). These men would have been 20-29 at the start of the war, which was the age of many of the Korean men who fought and died during the conflict.

2. PYRAMID C, 1975
  ▷ Preference for males is apparent in lower cohorts.

  ▷ Antinatalist policies in place in South Korea have begun working and you can see the impact in the younger cohorts.

  ▷ The 1962 National Family planning campaign has been established and you can see the impacts it is having in the younger cohorts.

  ▷ The Total Fertility Rate (TFR) declines from 6 in 1962 to 4.5 by 1970.

3. PYRAMID D, 1995
  ▷ Note that the pyramid now goes to over 100 years of age, reflecting the longer life expectancies.

  ▷ The overall population is still increasing due to demographic momentum, but the growth is slowing.

▷ The goal of reaching replacement level (a Total Fertility Rate of 2.1) was set in 1981 when South Korea's TFR was at a rate of 2.57. By 1984 the TFR was down to 1.74, showing that perhaps the efforts to reduce the birth rate were too effective.

4. PYRAMID A, 2015

▷ In 2005 South Korea hit a historic global low TFR of 1.08.

▷ The Saero-Maji plan was introduced in 2005 to raise fertility. This plan encouraged child bearing through incentives such as child care assistance and tax incentives, and was designed to raise the TFR to sustainable levels.

▷ The percentage of women wanting children had declined in South Korea due to women's increased educational access, as well as delayed marriages and child births and an increased number of women in the workplace.

▶ Debrief the activity with students, revealing the year of each pyramid and the factors that created the shape of the population pyramid for that year. In the discussion, focus on what information is shown in each pyramid and how we can use that information to make informed guesses on trends occurring before and after that time. You can use the information about each population pyramid found in the Teacher Answer Key to help aid your discussion. The goal of this process is to help students learn how to "read" the population pyramid.

▷ Potential questions to ask as students analyze the pyramids:

- What is the overall shape of the population pyramid? (Triangle? Rectangle?) What does the shape of the population pyramid tell us about South Korea?

- How does the width of the base of the pyramid compare with the width of the middle of the pyramid? How does the width of the base compare across pyramids? What do these comparisons tell us about how South Korea's population is changing over time?

- Are there any noticeable groups missing? Is there a gender imbalance? A sudden drop in one or a couple of cohorts? (Hint: Look then at these cohorts aging up to determine the chronological order.)

- Which population pyramid(s) is more typical for a Less Economically Developed Country (LEDC)? For a More Economically Developed Country (MEDC)? (Note: LEDCs are also referred to as Less Developed Countries (LDCs) and MEDCs are also referred to as More Developed Countries (MDCs).)

TEACHER NOTES

If students have not already mastered "reading" population pyramids from Day 1 and previous class instruction, more time may be required for this activity.

TEACHING TIP
Students are often proficient at identifying concepts, but not at explaining them. Challenge students to offer evidence-based, complete explanations for each concept discussed. Prior Chief Reader Reports published by the College Board indicate that students usually struggle to earn points when asked to explain their response or argument. One strategy is to require a clear "because" statement any time we ask students to explain.
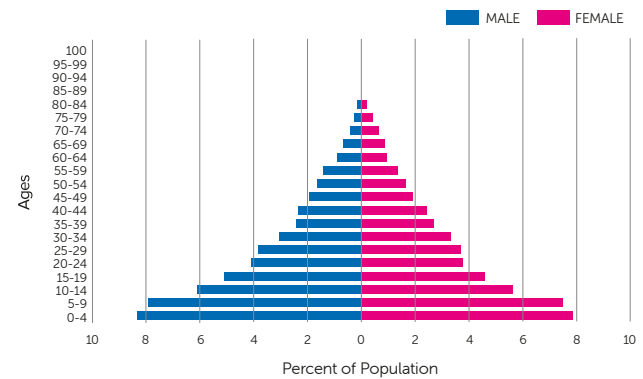
DAY 2 STUDENT HANDOUT

Name: _____ Period:_____

Hint: Typically countries progress from high birth rates and high death rates to low birth rates and low death rates. Think about how pyramids would then reflect that transition over time.
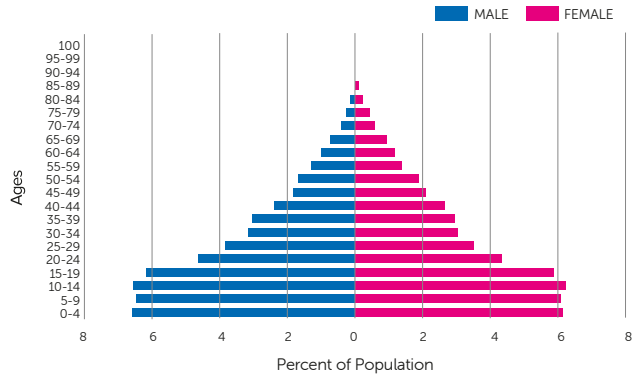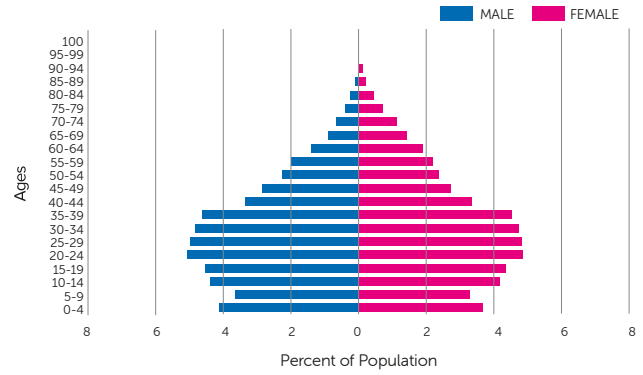
Pyramid A
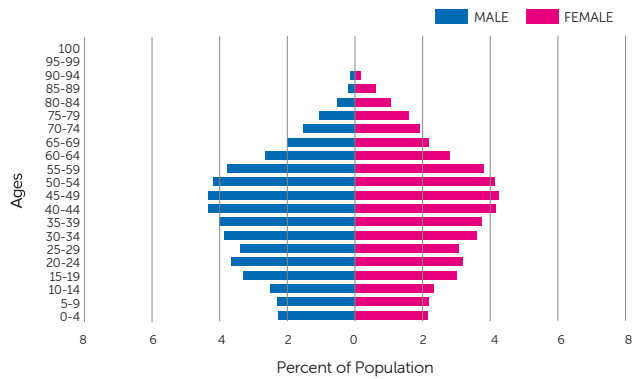
Pyramid B

Pyramid C

Pyramid D

Sort the above pyramids, in the correct chronological order for South Korea (oldest to most recent). Be sure to provide your rationale for your order (in other words, explain why you selected the order you did).

Pyramid Letter				
Rationale				

CLASS ACTIVITY (20 MINUTES): ANALYZING POPULATION POLICIES IN KOREA

ACTIVITY 2

Students will interact with different information about how antinatalist and pronatalist population policies were implemented in the Republic of Korea. Students will then apply their other population knowledge regarding why different population policies are enacted.

ACTIVITY PROCEDURE

▶ Have students analyze the posters and other documents provided in the In-Class Activity Materials in small groups. Have students remain in the same groups that were used in Activity 1. For each group, assign two documents to each student. This will allow each group of four to examine a total of eight separate documents. There are eleven documents in all, so the groups will not all examine the same documents.

▶ Students share their information on the Day 2 Student Document Analysis Handout (p. 47), using the following sentence stems to encourage depth of conversation

  ▷ This document illustrates _____ (antinatalist or pronatalist) policies ... because of...

  ▷ The most important quote or evidence from the document is ... because it shows....

▶ As students present their findings to their group, monitor discussions and correct any misconceptions or errors in the student's understanding.

▶ The group will then:

  ▷ Sort the documents into pronatalist and antinatalist categories in the space provided on the Group Discussion Handout (p. 48).

    • A possible answer for the pronatalist category is: Pronatalist policies are typically adopted when countries have an aging population and would like to encourage people to have more children through tax incentives.

    • A possible answer for the antinatalist category is: Antinatalist policies are typically adopted when countries have a large number of youth and would like to discourage people from having more children through tax penalties.

  ▷ Complete the group handout that includes reasons for pronatalist and antinatalist policies. The groups will also work to relate the documents back to the population pyramids from Activity 1.

CLASS ACTIVITY (15 MINUTES): CONSIDERING THE IMPACT OF MIGRATION

ACTIVITY 3

Since pronatalist policies in the Republic of Korea seem to have made little progress, another solution is to consider promoting migration to Korea. Just as there are consequences for aging populations (as students saw in Day 1), there are also consequences if migration is used as a solution to Korea's demographic decline. Students will finish the day's activity brainstorming the potential political, economic, and cultural effects of migration.

ACTIVITY PROCEDURE

▶ Students will remain in the same groups in which they have been working.

▶ On a poster or butcher paper, students take five minutes to brainstorm the most important political, economic, and cultural effects of encouraging migration. Be sure to point out to students that effects may be positive or negative.

▶ Groups will rotate to examine other groups' predictions and add to their list any effect that was not previously identified by their own group.

▶ Potential answers:

Political	Economic	Cultural
▷ Shifting demographics cause voters to have different priorities (social safety net vs. schools, etc.) ▷ Diversity may make political unity more difficult to obtain	▷ Larger workforce ▷ Larger consumer base ▷ Growing economy	▷ How to provide for diverse populations (social programs) ▷ Cultural changes, previous practices may be challenges as new people with new backgrounds enter ▷ May lead to new expressions of culture along with new ways of approaching issues

▶ Be sure to note that there should be some overlap between the Day 1 and Day 2 posters created by students since both represent demographic shifts, just of different types. Also, while immigration can help resolve some of the issues of aging populations, it also has other effects such as cultural change that can be difficult for societies to accept.

EXIT TICKET—QUICK WRITE (10 MINUTES)

ACTIVITY 4

Students will demonstrate what they have learned in Day 2 using a Quick-Write Exit Ticket.

ACTIVITY PROCEDURE

▶ Have students create THREE population pyramids.

  ▷ *The first pyramid* should show what the pyramid for South Korea would look like in 2050 *if* pronatalist initiatives are successful.

  ▷ *The second pyramid* should show what the pyramid for South Korea would look like in 2050 *if* pronatalist initiatives are not successful and the current population path continues.

  ▷ *The third pyramid* should show what the pyramid for South Korea would look like in 2050 *if* immigration is used as a demographic strategy.

Below the pyramids, students should:

  ▷ Explain how the pyramid for Seoul might differ from the pyramid for Korea as a country and why that difference might exist.

TEACHER NOTES

If current trends continue for the Republic of Korea in 2050, we might expect to see the population pyramid below (according to **http://populationpyramid.net**). If there is no solution, then it is possible in the very long term that the Republic of Korea will die out! The population prediction for 2100 is 38,503,824, down from 50,293,439 in 2015, but if the pronatalist initiatives are successful, then this predicted population pyramid will be wrong and there will then be a wider base. On the other hand, if migration is the solution, then perhaps there will be a bump in the 20-30 age group due to attracting guest workers or others into the country.

South Korea, 2050
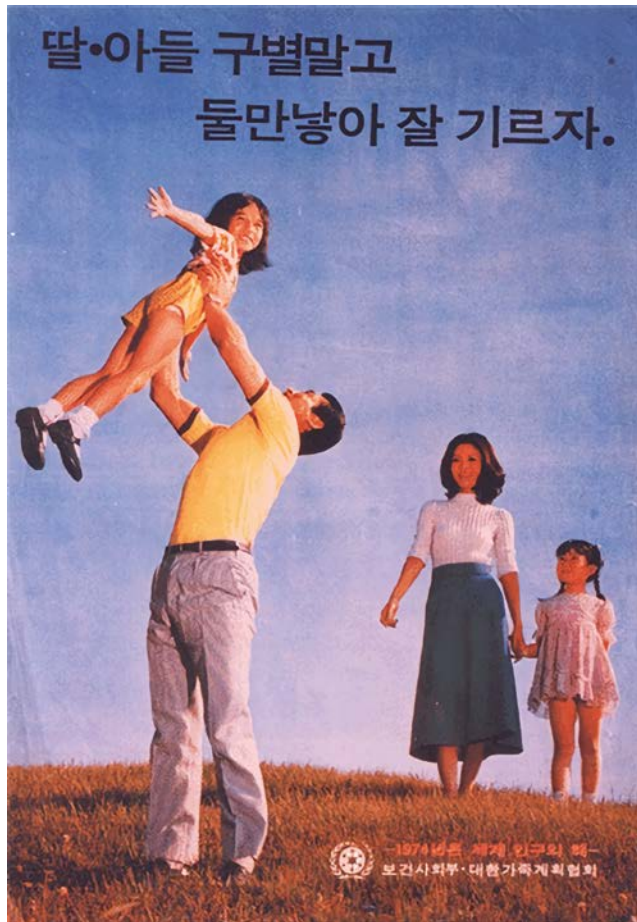Projected population if pronatalist policies are not successful
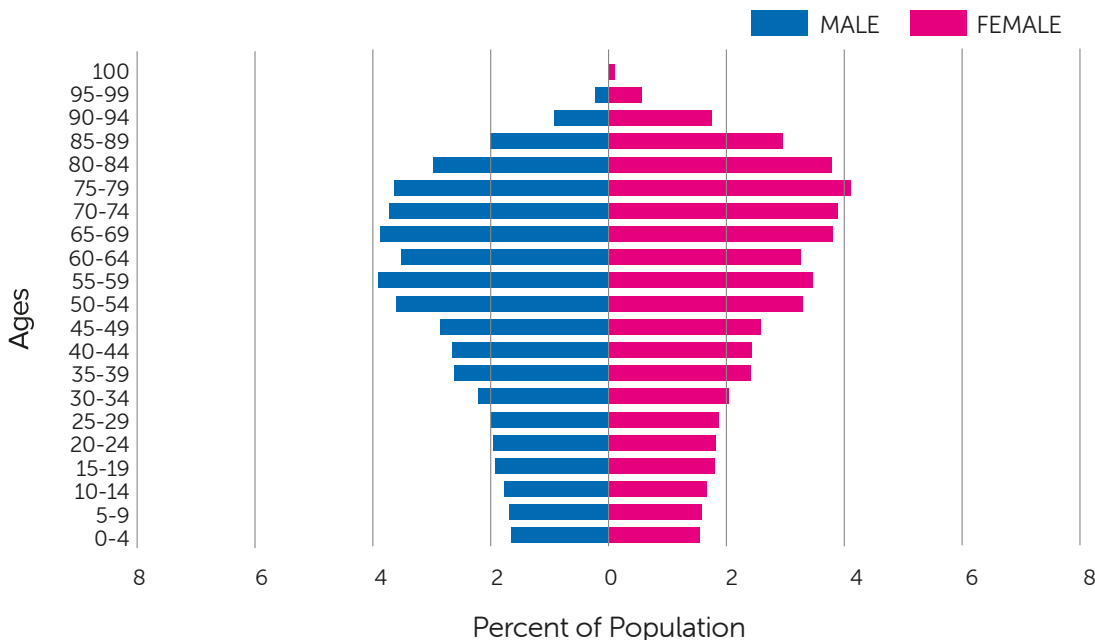
STUDENT HANDOUT: DOCUMENTS

DOCUMENT 1
South Korean Government Poster
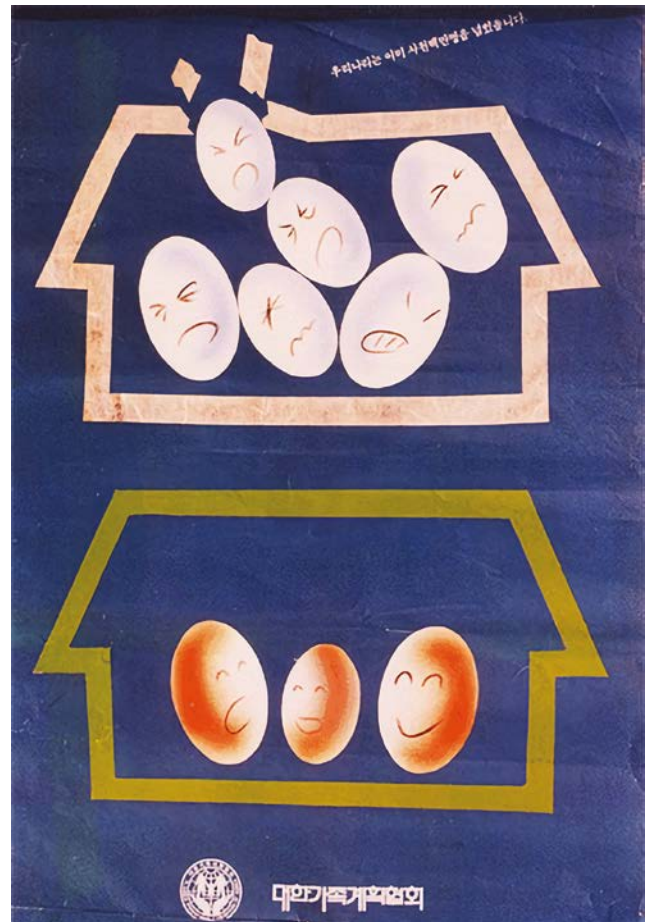"Don't discriminate between boys and girls, have only two children and raise them well."
Source: **https://thegrandnarrative.com/2012/02/16/korean-family-planning/**

DOCUMENT 2
South Korean Government Poster
"Korea's population has already exceeded 40 million"
Source: **https://thegrandnarrative.com/2012/02/16/korean-family-planning/**

DOCUMENT 3
South Korea's Child Care Policy
SOURCE: City Lab, 2018. **https://www.citylab.com/life/2018/08/south-korea-needs-more-babies/565169/**

Lydia Park crawls after her nine-month-old daughter, Irene, who's busy exploring a brand-new playroom inside a community center in Seoul, South Korea. Irene's just woken from her nap and she's full of energy. First she heads for the colorful building blocks in the back of the room, then finds her way to pretend kitchen in the corner. She races another baby up a little ramp, and before long, she's wading in a pit of pastel-colored plastic balls. All the while, Park's reflexes are tested as she repeatedly stops Irene from putting toys into her mouth. The playroom Park and Irene go to costs just 2,000 won—less than $2—for two hours. Park can also place her daughter in a public day care center or a government-subsidized private one for free, part of a universal free child care policy established in 2013 to significantly reduce the financial burdens of raising a child. If both parents hold jobs, their children will often get to jump to the front of the line for centers that have long waiting lists. And that's only a sampling of the suite of benefits Korean cities like Seoul offer to those having kids, from subsidized fertility treatments to free parking and housing assistance.

DOCUMENT 4

South Korea's Total Fertility Rate, 1960-2018

SOURCE: World Bank Data
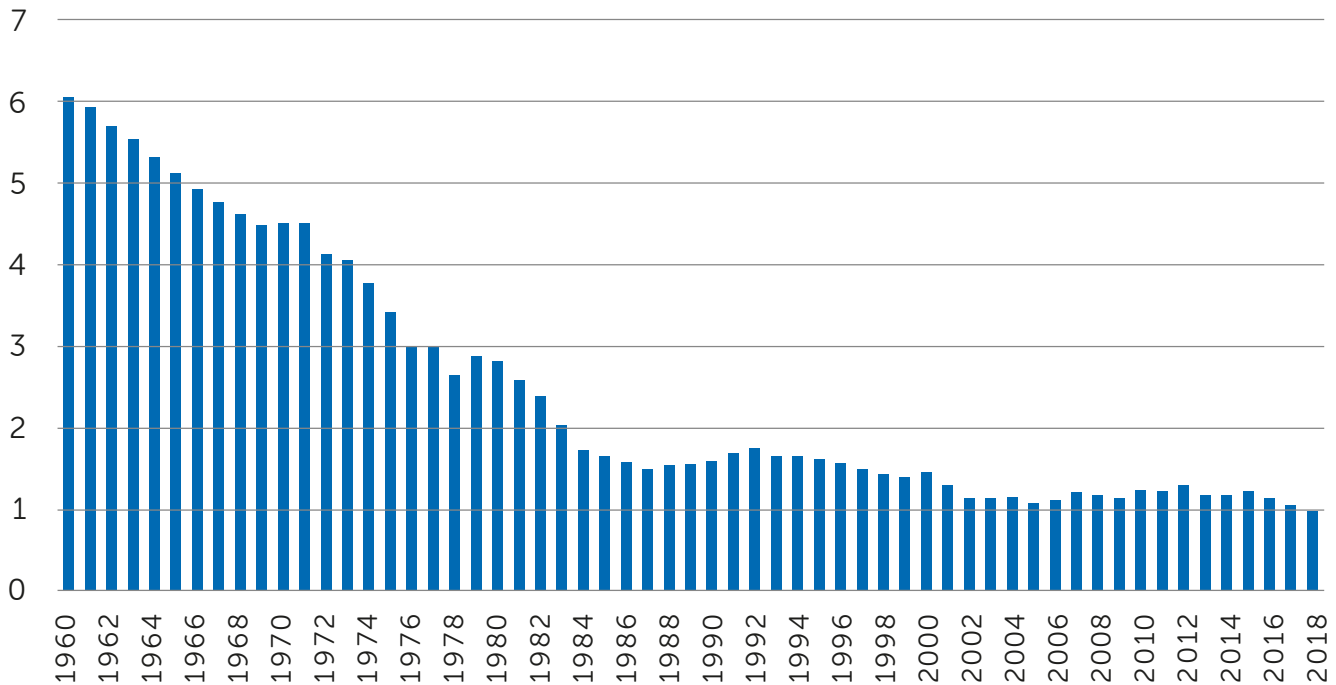
Total Fertility Rate

DOCUMENT 5

Field Note About Changing Family Sizes in Korea

SOURCE: A Korean father quoted in a 1982 field note, quoted in T.I. Kim and J.A. Ross, "The Korean Breakthrough," in W. Robinson and J. Ross (eds.), *The Global Planning Revolution: Three Decades of Population Policies and Programs* (Washington, DC: World Bank, 2000). **http://siteresources.worldbank.org/INTPRH/Resources/GlobalFamilyPlanningRevolution.pdf**

When I meet young people, they usually ask me how many children I have. To this question, my answer has been the same for the last 30 years: that is, "I have five children, four sons and one daughter." But their reactions have never been the same. In the fifties, they said "You are the most blessed man in the world." In the sixties, the response was "You are lucky, but you should have a hard time." In the seventies, it changed to "How come you have so many?" Nowadays, they say bluntly, "You must be crazy."

DOCUMENT 6

Korea Endorses Loop for Birth Control

SOURCE: New York Times Archives, October 4, 1964, **https://www.nytimes.com/1964/10/04/archives/korean-group-backs-loop.html**

SEOUL, South Korea, Sept. 29. Medical advisers of the Planned Parenthood Federation of Korea have announced the endorsement of the use of a loop in the uterus as a birth-control method.

Experimenting with the method is in its third year in South Korea. The federation reported that, since September 1962, about 13,000 Korean women had used the plastic loops, originally developed by Dr. Jack Lippes of the University of Buffalo. It said the number was increasing at the rate of nearly 1,500 every month. The intra-uterine contraceptive device has been available free of charge at 13 public health centers throughout the country.

Government Support for Housing For Families With 3+ Children
SOURCE: http://english.seoul.go.kr/policy-information/education-women-children/nurture/2-childbirth-rearing/

The Seoul Metropolitan Government announced assistance for married couples with at least three children.

Housing Support
Priority Supply of National Rental Houses
- Target: Newly married couples, household heads who have no house and at least three children

- Number of houses: Within 20% of constructed houses (Newly married couples: 15–30%)

Rental Fee Loan
- Target: Newly married couples (Less than KRW 100 million* of the rental deposit), families with at least three children (Less than KRW 110 million of the rental deposit)

- Contents: Loan amount—within 70% of the rental deposit (Maximum KRW 63 million, KRW 56 million for a newly married couple) / Loan Interest Rate—2%

* In 2020, there were about 1,130 Korean Won (KRW) to the U.S. dollar. In South Korea, it is typical for a tenant to prepay a very large amount of rent in the form of an advance deposit to the landlord.

DOCUMENT 8
South Korean Government Poster
"Korea is already overflowing"
Source: **https://thegrandnarrative.com/2012/02/16/korean-family-planning/**

DOCUMENT 9
South Korean Government Poster
"One family, full of love. One child, full of health"
Source: **https://thegrandnarrative.com/2012/02/16/korean-family-planning/**

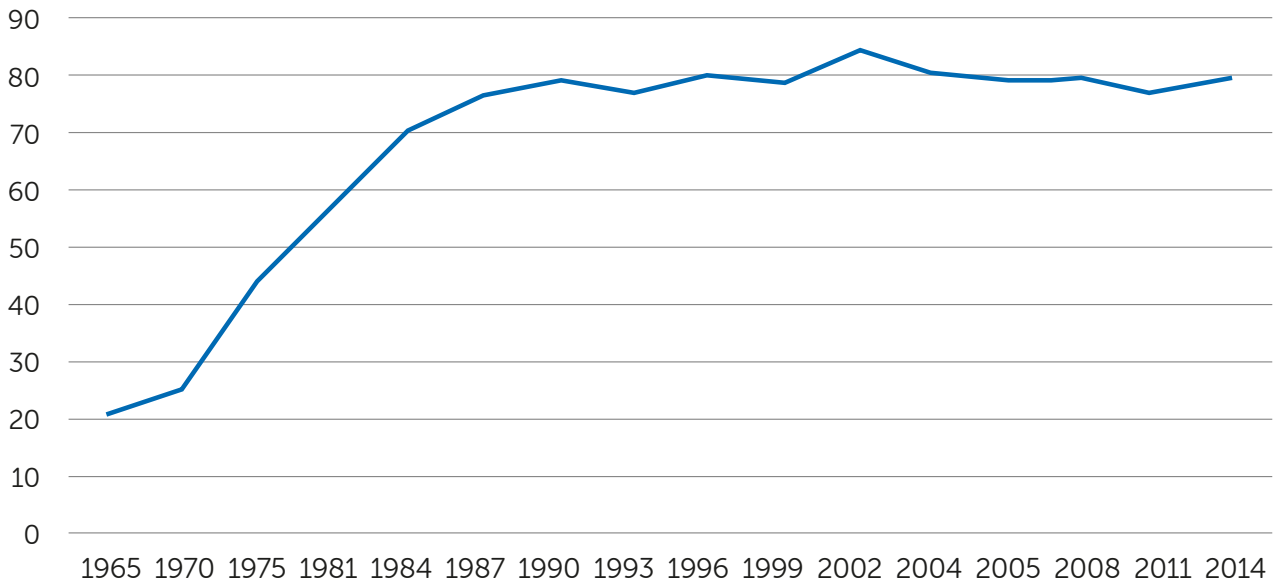## Percentage of South Korean Women Using Contraception (Ages 15-49), 1965–2014
SOURCE: World Bank

South Korea's Saero-Maji Plan
SOURCE: Population Reference Bureau, "Did South Korea's Population Policy Work Too Well?," 2010, **https://www.prb.org/koreafertility**

The Saero-Maji ("New Beginning") Plan for the 2006-2010 period included provisions to provide a more favorable environment for childbearing. The plan had a long list of measures, including tax incentives, priority for the purchase of a new apartment, support for child care, including a 30 percent increase in facilities, childcare facilities at work, support for education, and assistance to infertile couples. In June 2006, the government announced the Vision 2020 Plan to raise fertility and prepare for a society with extreme aging.

DAY 2 STUDENT HANDOUT: DOCUMENT ANALYSIS

Name: _____ Period:_____

Document	Task
#_____	This document illustrates _____ (antinatalist or pronatalist) policies because of _____and _____. The most important quote or evidence from this document is _____ _____ because it shows _____ _____.

Document	Task
#_____	This document illustrates _____ (antinatalist or pronatalist) policies because of _____and _____. The most important quote or evidence from this document is _____ _____ because it shows _____ _____.

DAY 2 STUDENT HANDOUT: GROUP DISCUSSION

Name: _____ Period:_____

Antinatalist (Write the Document Numbers below)	**Pronatalist** (Write the Document Numbers below)
Reasons for Antinatalist Policy in South Korea	**Reasons for Pronatalist Policy in South Korea**
How are your responses above related to Population Pyramid data from South Korea?	

REMINDER: Be sure EVERY group member understands your answers and is ready to participate in our class discussion.

TEACHER ANSWER KEY

These teacher notes will help teachers to explain the documents:

▶ **Document 1: Antinatalist**. These posters help to provide the message of a better, more prosperous life with fewer children. Note that the first poster says "Don't discriminate between boys and girls" in an effort to help the gender imbalance, and also to discourage couples from keeping on having children until they have a boy.

▶ **Document 2: Antinatalist**. This poster helps provide the message of a better, more prosperous life with fewer children. This is a way of encouraging people to have fewer children.

▶ **Document 3: Pronatalist**. This document shows public daycare centers subsidized by the government and mentions that more incentives are available in cities such as Seoul due to particularly low TFRs in urban areas compared with rural ones.

▶ **Document 4: BOTH Antinatalist and Pronatalist**. This chart shows fluctuations in the TFR over time. The high TFR in 1970 of 4.53 is well above replacement level (2.1) and justifies the implementation of antinatalist policies. The low TFR of 1.08 in 2005 justifies current pronatalist efforts in South Korea. Note the impact of antinatalist policies took place quite quickly, whereas any rises in the TFR have only been small.

▶ **Document 5: Antinatalist**. This document represents a shift in cultural perceptions of family size, with a clear preference for smaller families as time goes on. Those preferences have continued today, despite government efforts to the contrary.

▶ **Document 6: Antinatalist**. This snippet reveals several key pieces of information. First, the fact that Korea had developed a Planned Parenthood Foundation shows an emphasis on family planning. It also shows that the birth control method has not only been increasing in use, but is also being provided free of charge by the government.

▶ **Document 7: Pronatalist**. This document shows that the government gives preferences, including for in-demand housing, to those with children.

▶ **Document 8: Antinatalist**. This poster helps provide the message of a better, more prosperous life with fewer children.

▶ **Document 9: Antinatalist**. This poster helps provide the message of a better, more prosperous life with fewer children.

▶ **Document 10: Antinatalist**. This chart shows the increase in contraception over 3 decades. Note that there is a rapid ascent from 20% to 80% over 30 years.

▶ **Document 11: Pronatalist**. This document outlines some of the provisions of the Saero-Maji plan and also mentions the concern of extreme aging, illustrating that Korea is now at the other end of the age-dependency ratio. Previously, concern used to be focused on the percentage of children in the population, but now it is focused on the high percentage of elderly.

After groups have finished, debrief as a class. Put the class answers on large paper or write these on the board. Some possible student responses may include:

▶ Reasons for antinatalist policies:

▷ Concerns about rapid population growth

▷ Resource scarcity

▷ Too young a population creating a very high dependency ratio

▷ Change of the economy from a more agricultural economy, where children are more valuable for labor, to a more industrial and post-industrial economy, where children are viewed as more of an economic burden

▶ Reasons for pronatalist policies:

▷ Concerns about declining population (the TFR drops below the replacement level)

▷ If the economy is declining, more people can help stimulate demand

▷ Too old a population creates a very high dependency ratio

TEACHING TIP
Point out to students that the dependency ratio (percentage of the population 0-14 years old and percentage of population 65+) can be a reason for both antinatalist and pronatalist policies because the dependency ratio is based on different sides of the same issue (old vs young).