

Understanding Down Syndrome



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About the Author



Denise DuBois is the RealCare Product Manager at Realityworks and has worked in education for over 30 years. Mrs. DuBois earned her B.A. in Elementary Education and Fine Arts Administration at St. Olaf College. She later received an advanced degree in Educational Administration from William Howard Taft University.

Mrs. DuBois has over 20 years of instructional design and professional development experience in grades K-12. She previously worked for the Core Knowledge Foundation as a professional development consultant and at Otter Creek Institute as their new product development and professional development coordinator. She also worked with a local group to start a private non-denominational K-8 school where she taught art and music.

As the RealCare Product Manager, Denise works with all things relating to RealCare Baby and the other Total Parenting Experience products, including Shaken Baby, Fetal Alcohol Syndrome Baby, Drug-Affected Baby, and the Pregnancy Profile Simulator. Denise is the coordinator of the RealCare Baby User Group, a national forum open to all RealCare customers. Mrs. DuBois is a frequent blog contributor as well as webinar presenter on RealCare-related topics monthly. She also coordinates internal on-site and online training for the RealCare Baby product line.

Mrs. DuBois has been a presenter at the national Association for Career and Technical Education conference and numerous state education conferences.

In addition to recent curricula like *The Geriatric Experience*, Mrs. Dubois has also authored *Using the RealCare Program for Career Exploration*, the *RealCareer Employability Skills Program*; the *RealCareer Business and Marketing Career Exploration Program*, and *Integrating Social Media into Your FACS Program*.

Denise DuBois is currently the co-chair for the Alliance for Family and Consumer Sciences. She is also the Realityworks liaison for the National Coalition for Health Science Education.

Introduction

The RealCare™ Down Syndrome Baby is an instructional aid created to help increase awareness and understanding of births with Down syndrome, and to help understand the challenges and misconceptions that can be associated with Down syndrome. This manikin has more than a dozen common physical features found in infants with Down syndrome.

This curriculum introduces the Down Syndrome Baby, presents documented information about risk factors and physical attributes of an infant with Down syndrome, physical challenges associated with Down syndrome and the possibilities of independency for adults with Down syndrome. The curriculum also provides activities and discussions designed to educate participants and communities about the challenges and opportunities for individuals with Down syndrome.

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table which lists the lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The overview is followed by the actual lesson, which will contain some of the sections described below.

FOCUS

Each lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, game, review of previous lesson information, or demonstration. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points; or, if it is the last lesson in the unit, the REVIEW activity will serve as the unit formative assessment. Participant scores on these short assessments will help you determine what concepts or skills may need reinforcement or review.

Curriculum Structure

The *Understanding Down Syndrome* curriculum is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
1	Focus: Pretest	5-10 minutes
1	Learn: Definition, Characteristics and Misconceptions	35-45 minutes
1	Review: Posttest	5-10 minutes
	Total	50-60 minutes

Lesson One – Understanding Down Syndrome

Lesson Objectives



Lesson Overview

In this lesson, participants will learn the risk factors, health challenges, and misconceptions associated with Down syndrome. Participants will be introduced to the RealCare™ Down Syndrome Baby and see the common physical features associated.

After completing this lesson, participants will:

- Gain awareness of the facts and causes surrounding Down syndrome.
- Document their initial knowledge about Down syndrome before the start of the lesson.
- Understand common misconceptions about Down syndrome
- List key national and international statistics surrounding Down syndrome.
- Identify the potential characteristics of Down syndrome.
- Identify short- and long-term effect on infants born with Down syndrome.

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Down Syndrome Pretest</i> • <i>Down Syndrome Pretest – Answer Key</i>	1. Print/photocopy <i>Down Syndrome Pretest</i> (one per participant)	5-10 minutes
LEARN	• <i>Down Syndrome Myths and Truths</i> slide presentation • <i>Understanding Down Syndrome</i> slide presentation • <i>Down Syndrome – True or False</i> • <i>Down Syndrome Fact Sheet</i> • <i>Down Syndrome Fact Sheet – Answer Key</i> • Down Syndrome Baby • RealCare® Baby (if available)	1. Prepare to display the <i>Down Syndrome Myths and Truths</i> and <i>Understanding Down Syndrome</i> slide presentations 2. Print/photocopy <i>Down Syndrome True or False</i> and <i>Down Syndrome Fact Sheet</i> (one per participant)	35-45 minutes
REVIEW	• <i>Down Syndrome Posttest</i> • <i>Down Syndrome Posttest – Answer Key</i>	1. Print/photocopy <i>Down Syndrome Posttest</i> (one per participant)	5-10 minutes

Note: Participants should take the Pretest before the start of the lesson. Information from the Pretest can be compared with information from the Posttest, which participants will take upon completion of the lesson to measure changes in their knowledge.

Lesson One – Understanding Down Syndrome

FOCUS: Pretest

5-10 minutes

Purpose:

This activity measures participants' knowledge about Down syndrome before the start of the lesson. Information from the Pretest can be compared with information from the Posttest to measure improvement in participant knowledge.

Materials:

- *Down Syndrome Pretest*
- *Down Syndrome Pretest – Answer Key*

Facilitation Steps:

1. Distribute the *Down Syndrome Pretest* to the participants and give them 5-10 minutes to complete it.

Name: _____

Down Syndrome Pretest

Directions: The following questions will ask you about your knowledge of Down syndrome. Circle the best answer(s) or write your responses in the space provided.

1. Trisomy 21 is responsible for the occurrence of _____% of Down syndrome cases.
 - a. 40
 - b. 13
 - c. 95
 - d. 66
2. Who was Down syndrome named after?

_____ Joseph John Thomson

_____ Jackson William Down

_____ Arthur Down Kent

_____ John Langdon Down
3. Approximately 1 in every 600 infants are born with Down Syndrome in the United States.
 - a. True
 - b. False
4. _____ babies are born with Down syndrome in the United States each year.
 - a. One thousand
 - b. One hundred thousand
 - c. Six thousand
 - d. Nine thousand
5. Which of the following are common physical characteristics of an infant with Down syndrome?
 - a. Round, circular eyes
 - b. Overweight
 - c. Single palmar crease
 - d. Straight 5th finger
 - e. Brushfield spots
 - f. Narrow space between big and 2nd toe
 - g. Flat facial profile
 - h. Narrow forehead
6. What are some recommended educational methods for working with individuals with Down syndrome?
 - a. Show them once
 - b. Special educational programs
 - c. Active home environment
 - d. Written documentation
 - e. Being patient and allow for repetition
7. Which is an example of the recommended use of language for Down syndrome?
 - a. Down's syndrome
 - b. Down's syndrome child
 - c. Child suffering from Downs syndrome
 - d. A child with Down syndrome
8. What percentage of infants with Down syndrome are born to mothers under the age of 35?

_____%
9. Individuals with Down syndrome cannot have children.
 - a. True
 - b. False
10. Adults with Down syndrome are like children with Down syndrome.
 - a. True
 - b. False
11. Which of the following causes Down syndrome?
 - a. A missing 11th chromosome
 - b. Three extra chromosomes
 - c. Birth trauma during delivery
 - d. A full or partial extra copy of chromosome 21
12. Which risks are higher for infants with Down syndrome compared to infants without Down syndrome?
 - a. Increased risk of SIDS
 - b. Alzheimer's disease
 - c. Cerebral palsy
 - d. Club foot
 - e. Childhood leukemia
 - f. Visual impairments
 - g. Greater than average height
 - h. Hearing impairments
 - i. Baldness
 - j. Congenital heart defects
 - k. Thyroid conditions

Down Syndrome Pretest – Answer Key

1. Trisomy 21 is responsible for the occurrence of _____% of Down syndrome cases.
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 - b. 13
 - c. 95**
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 - e. Be patient and allow for repetition**
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80 %
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 - e. Childhood leukemia**
 - f. Visual impairments**
 - g. Greater than average height
 - h. Hearing impairments**
 - i. Baldness
 - j. Congenital heart defects**
 - k. Thyroid conditions**

Lesson One – Understanding Down Syndrome

LEARN: Definition, Characteristics and Misconceptions

35-45 minutes

Purpose:

In this discussion the instructor defines what Down syndrome is, sharing common characteristics and challenges as well as common misconceptions of individuals with Down syndrome.

Materials:

- *Down Syndrome Myths and Truths* slide presentation
- *Understanding Down Syndrome* slide presentation
- *Down Syndrome – True or False*
- *Down Syndrome Fact Sheet*
- *Down Syndrome Fact Sheet – Answer Key*
- Down Syndrome Baby
- RealCare® Baby (if available)

Facilitation Steps:

1. Give each participant the *Down Syndrome – True or False* handout. Have them complete the handout and then share the answers during the *Down Syndrome Myths and Truths* slide presentation.¹
2. Show the *Down Syndrome Myths and Truths* slide presentation. Share the following information:

Slide 1 and 2: Introduction and Title Slides

Slide 3: Individuals with Down syndrome are always happy.

Answer: False

Truth: Individuals with Down syndrome have feelings just like anyone else with or without a disability. They experience the same full range of emotions. They respond to positive expressions of friendship and are hurt and upset by inconsiderate behavior.

Slide 4: Individuals with Down syndrome can have children.

Answer: True

Truth: Women with Down syndrome can bear and raise children. In addition, men with Down syndrome can also father and parent children.

Slide 5: Down syndrome is a common disorder.

Answer: True

Truth: Down syndrome is the most commonly occurring chromosomal disorder.

Slide 6: Down syndrome is hereditary and runs in families.

Answer: False

Truth: Translocation, a type of Down syndrome that accounts for 3-4% of all cases, is the only type of Down syndrome known to have a hereditary component. Of those, one-third (or 1% of all cases of Down syndrome) are hereditary.

Slide 7: Most children with Down syndrome are born to older parents.

Answer: False

Truth: Most children with Down syndrome are born to women younger than 35 years. However, the likelihood of having a child with Down syndrome increases with the age of the mother, especially after age 35.

Slide 8: All people with Down syndrome have a severe learning disability.

Answer: False

Truth: Most people with Down syndrome have a mild to moderate learning or intellectual disability. This is not indicative of the strengths and talents that each individual possesses. It may, however, take the person extra time to get things done or said.

Understanding Down Syndrome

Slide 9: Individuals with Down syndrome are always sick.

Answer: False

Truth: Though individuals with Down syndrome are at an increased risk for certain medical conditions, such as congenital heart defects, respiratory and hearing problems, and thyroid conditions, advances in healthcare have allowed most individuals with Down syndrome to lead healthy lives.

Slide 10: Students with Down syndrome can only be taught in special schools.

Answer: False

Truth: It is the law that students with Down syndrome be included in typical academic classrooms based on the IDEA legislation, which helps govern the rights of those with disabilities and advocates for them to be allowed the same education rights as their peers.

Slide 11: Individuals with Down syndrome can be active members of their community.

Answer: True

Truth: Individuals with Down syndrome are as capable of being independent and provide to society as much as individuals without a disability. They are included in the standard education system and take part in sports, music, art, and many other community activities. They are valued members of society and make meaningful contributions.

Slide 12: Adults with Down syndrome are the same as children with Down syndrome.

Answer: False

Truth: Adults with Down syndrome are not children and should not be treated like children. They enjoy activities and companionship with other adults and have the same needs and feelings as their peers.

Slide 13: Adults with Down syndrome are able to form long-lasting relationships, including marriage.

Answer: True

Truth: People with Down syndrome socialize and have meaningful friendships like everyone else.

Slide 14: Adults with Down syndrome are unemployable.

Answer: False

Truth: Many businesses employ adults with Down syndrome for a variety of positions. Like anyone else they want to have a job where their work will be valued. Individuals with Down syndrome are able to seek and secure employment. They are able to perform their job as well as anyone.

3. Hold the Down Syndrome Baby in your arms as you would a real infant and introduce it to the class.
4. Explain that the manikin represents a newborn baby that portrays common physical characteristics of an infant with Down syndrome. It is important to explain that not all infants with Down syndrome have the same physical attributes.
5. Ask participants what they notice about the manikin's physical features that is different from the features of a typical baby. Write these down. Add information as needed to supplement their observations.
 - Almond-shaped eyes with an upward slant and a skin fold covering the inner corner
 - Flat facial profile and a small, flat nose
 - Low, weak muscle tone that results in additional neck folds, which lack a supportive head and limbs
 - Single palmar crease: deep crease across the center of the palm
 - Ears set further back and lower on the head
 - Prominent, broad forehead
 - Bent fifth finger
 - Larger torso relative to the arms and legs
 - White spots on the iris of the eye called "Brushfield spots"
 - Wide space between the big and second toe
6. If you have a RealCare® Baby available, hold it up next to the Down Syndrome Baby to compare their sizes and features.
7. Have participants pass the Down Syndrome Baby among each other and instruct them to carefully observe the manikin's physical features. Follow this by passing around a RealCare® Baby (if possible) so they can see and feel the difference.

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8. Hand out the *Down Syndrome Fact Sheet*. Instruct students to complete it while you share the *Understanding Down Syndrome* slide presentation. An answer key is provided for the instructor.

In lieu of completing the *Down Syndrome Fact Sheet*, a free Down Syndrome Fact Sheet is available from the National Down Syndrome Society at:

<http://www.ndss.org/wp-content/uploads/2017/08/NDSS-Fact-Sheet-Language-Guide-2015.pdf>.

The NDSS has given permission to print and distribute this fact sheet.

Slide 1 and 2: Introductory slides

Slide 3: Down syndrome occurs when an individual has a full or partial extra copy of chromosome 21. This additional genetic material alters the course of development and causes the characteristics associated with Down syndrome. Named for English physician John Langdon Down. He characterized the condition but did not have it.

Slide 4: There are three types of Down syndrome: trisomy 21 (nondisjunction) accounts for 95% of cases, translocation accounts for about 4%, and mosaicism accounts for about 1%.

Slide 5: Down syndrome is the most commonly occurring chromosomal condition. Approximately one in every 700 babies in the United States is born with Down syndrome, about 6,000 each year.

Slide 6: The estimated statistical incidence of Down syndrome is between 1 in 1,000 to 1 in 1,100 live births worldwide.³

Slide 7: Down syndrome occurs in people of all races and economic levels. The occurrence of the birth of a child with Down syndrome increases with the age of the mother. However, due to higher fertility rates in younger women 80% of children with Down syndrome are born to women under 35 years of age. Life expectancy for people with Down syndrome has increased dramatically in recent decades, from 25 in 1983 to 60 today.

Slide 8: People with Down syndrome have an increased risk for certain medical conditions

such as respiratory and hearing problems, congenital heart defects, thyroid conditions, childhood leukemia, and Alzheimer's disease. Many of these conditions are now treatable, so most people with Down syndrome can lead healthy lives.

Slide 9: A few common physical traits of Down syndrome are: almond-shaped eyes with an upward slant and a skin fold covering the inner corner; flat facial profile; small, flat nose; low, weak muscle tone that makes individuals unable to support their head or effectively move their arms and legs.

Slide 10: Single palmar crease: deep crease across the center of the palm; ears set further back and lower on the head; broad, prominent forehead; bent fifth finger; larger torso relative to the arms and legs.

Slide 11: Additional common characteristics are white spots on the iris of the eye called "Brushfield spots" and a wide space between the big and second toe.

Slide 12 and 13: Every person with Down syndrome is a unique individual and may possess these characteristics to varying degrees or not at all. People with Down syndrome attend school, work, participate in decisions that affect them, have meaningful relationships, vote, and contribute to society in many ways. All people with Down syndrome experience cognitive delays, but the effect is usually mild to moderate and is not indicative of the strengths and talents that each individual possesses.

Slide 14: Quality educational programs, a stimulating home environment, good healthcare and positive support from family, friends, and the community enable people with Down syndrome to lead fulfilling and productive lives.

Slide 15: These guidelines come from a free resource published by the National Down Syndrome Society at:

<https://www.ndss.org/wp-content/uploads/2018/02/NDSS-Preferred-Language-Guide-2015.pdf>.

People with Down syndrome should always be referred to as people first. Instead of "a Down syndrome child," it should be "a child with Down syndrome." Avoid using the term "Down's child" and avoid describing the

Understanding Down Syndrome

condition as “Down’s,” as in, “He has Down’s.”
Down syndrome is a syndrome, not a disease.
People have Down syndrome; they do not suffer
from it and are not afflicted by it.

Slide 16: “Typically developing” or “typical” is
preferred over “normal.”

“Intellectual disability” or “cognitive disability”
has replaced “mental retardation” as the
appropriate term. The National Down Syndrome
Society uses the preferred spelling for the
condition, Down syndrome, rather than Down’s
syndrome.

Name: _____

Down Syndrome – True or False?

Circle True or False for each of the following statements relating to Down syndrome.

- True False 1. Individuals with Down syndrome are always happy.
- True False 2. Individuals with Down syndrome can have children.
- True False 3. Down syndrome is a common disorder.
- True False 4. Down syndrome is hereditary and runs in families.
- True False 5. Most children with Down syndrome are born to older parents.
- True False 6. All people with Down syndrome have a severe learning disability.
- True False 7. Individuals with Down syndrome are always sick.
- True False 8. Students with Down syndrome can only be taught in special schools.
- True False 9. Individuals with Down syndrome can be active members of their community.
- True False 10. Adults with Down syndrome are the same as children with Down syndrome.
- True False 11. Adults with Down syndrome are able to form long-lasting relationships, including marriage.
- True False 12. Adults with Down syndrome are unemployable.

Name: _____

Down Syndrome Fact Sheet

Complete the following note page as the slide presentation is shared.

Down syndrome occurs when an individual has a full or partial extra copy of chromosome _____. This additional genetic material alters the course of development and causes the characteristics associated with _____ syndrome.

Down syndrome is named for which English physician?

There are three types of Down syndrome:

- 1.
- 2.
- 3.

Down syndrome is the most commonly occurring chromosomal condition. Approximately one in every _____ babies in the United States is born with Down syndrome—about _____ each year.

Down syndrome occurs in people of all _____ and economic levels.

The incidence of births of children with Down syndrome _____ with the age of the mother. But due to higher fertility rates in younger women, 80% of children with Down syndrome are born to women under _____ years of age.

People with Down syndrome have an _____ risk for certain medical conditions such as:

- Congenital _____ defects
- Respiratory and _____ problems
- Alzheimer's disease
- Childhood _____
- _____ conditions
- Many of these conditions are now treatable, so most people with Down syndrome lead healthy lives. Life expectancy for people with Down syndrome has increased dramatically in recent decades - from 25 in 1983 to 60 today.

A few of the common physical traits of an infant with Down syndrome are:

Understanding Down Syndrome

Every person with Down syndrome is a unique individual and may possess all, some, or none of the physical characteristics of Down syndrome to different degrees.

Life expectancy for people with Down syndrome has increased dramatically in recent decades, from _____ in 1983 to _____ today.

People with Down syndrome can do many things including:

All people with Down syndrome experience _____ delays, but the effect is usually _____ to moderate and is not indicative of the strengths and talents that each individual possesses.

Quality educational programs, a stimulating home environment, good health care and positive support from family, friends and the community enable people with Down syndrome to lead fulfilling and productive lives.

People with Down syndrome should always be referred to as _____ first.

Instead of “a Down syndrome child,” it should be “_____”

Down syndrome is a syndrome, not a _____.

Use _____ syndrome, rather than Down’s syndrome.

Down Syndrome Fact Sheet – Answer Key

Down syndrome occurs when an individual has a full or partial extra copy of chromosome **21**. This additional genetic material alters the course of development and causes the characteristics associated with **Down** syndrome.

Down Syndrome is named for which English physician? **John Langdon Down**

There are three types of Down syndrome:

1. Trisomy 21 – 95% of cases

2. Translocation – 4% of cases

3. Mosaicism – 1% of cases

Down syndrome is the most commonly occurring chromosomal condition. Approximately one in every **700** babies in the United States is born with Down syndrome—about **6,000** each year.

Down syndrome occurs in people of all **rac**es and economic levels.

The incidence of births of children with Down syndrome **increases** with the age of the mother. But due to higher fertility rates in younger women, 80% of children with Down syndrome are born to women under **35** years of age.

People with Down syndrome have an **increased** risk for certain medical conditions such as:

- Congenital **heart** defects
- respiratory and **hearing** problems
- Alzheimer’s disease,
- Childhood **leukemia**
- **Thyroid** conditions.

Many of these conditions are now treatable, so most people with Down syndrome lead healthy lives.

A few of the common physical traits of Down syndrome are:

- **Almond-shaped eyes with an upward slant to the eyes and skin fold covering the inner corner**
- **Flat facial profile and a small, flat-nose**
- **Low, weak muscle tone and are unable to support their head or effectively move their arms and legs**
- **Single palmar crease: deep crease across the center of the palm**
- **Ears set further back and lower on the head**
- **Prominent, broad forehead**
- **Bent 5th finger**
- **Larger torso relative to their arms and legs**
- **White spots on the iris of the eye called “Brushfield spots”**
- **Wide space between the big and second toe**

Understanding Down Syndrome

Every person with Down syndrome is a unique individual and may possess a, some, or none of the physical characteristics of Down syndrome to different degrees.

Life expectancy for people with Down syndrome has increased dramatically in recent decades, from **25** in 1983 to **60** today.

People with Down syndrome can do many things including:

- **Attend school**
- **Work**
- **Participate in decisions**
- **Have meaningful relationships**
- **Vote**
- **Contribute to society**

All people with Down syndrome experience **cognitive** delays, but the effect is usually **mild** to moderate and is not indicative of the strengths and talents that each individual possesses.

Quality educational programs, a stimulating home environment, good health care and positive support from family, friends and the community enable people with Down syndrome to lead fulfilling and productive lives.

People with Down syndrome should always be referred to as **people** first.

Instead of "a Down syndrome child," it should be **"a child with Down syndrome."**

Down syndrome is a syndrome, not a **disease**.

Use **Down** syndrome, rather than Down's syndrome.

Lesson One - Understanding Down Syndrome

REVIEW: Posttest

5-10 minutes

Purpose:

This activity measures participants' knowledge about Down syndrome upon completion of the lesson. Information from this Posttest can be compared with information from the Pretest to measure the change in participants' knowledge about Down syndrome as a direct result of the lesson.

Materials:

- *Down Syndrome Posttest*
- *Down Syndrome Posttest – Answer Key*

Facilitation Steps:

1. Give each participant a copy of the *Down Syndrome Posttest*. Allow participants 5-10 minutes to complete it.
2. If desired, use the *Down Syndrome Posttest – Answer Key* to review participants' responses.

Name: _____

Down Syndrome Posttest

Directions: The following questions will ask you about your knowledge of Down syndrome. Circle the best answer(s) or write your responses in the space provided.

1. Trisomy 21 is responsible for the occurrence of _____ % of Down syndrome cases.
 - a. 40
 - b. 13
 - c. 95
 - d. 66
2. Who was Down syndrome named after?

_____ Joseph John Thomson

_____ Jackson William Down

_____ Arthur Down Kent

_____ John Langdon Down
3. Approximately 1 in every 600 infants are born with Down Syndrome in the United States.
 - a. True
 - b. False
4. _____ babies are born with Down syndrome in the United States each year.
 - a. One thousand
 - b. One hundred thousand
 - c. Six thousand
 - d. Nine thousand
5. Which of the following are common physical characteristics of an infant with Down syndrome?
 - a. Round, circular eyes
 - b. Overweight
 - c. Single palmar crease
 - d. Straight 5th finger
 - e. Brushfield spots
 - f. Narrow space between big and 2nd toe
 - g. Flat facial profile
 - h. Narrow forehead
6. What are some recommended educational methods for working with individuals with Down syndrome?
 - a. Show them once
 - b. Special educational programs
 - c. Active home environment
 - d. Written documentation
 - e. Being patient and allow for repetition
7. Which is an example of the recommended use of language for Down syndrome?
 - a. Down's syndrome
 - b. Down's syndrome child
 - c. Child suffering from Downs syndrome
 - d. A child with Down syndrome
8. What percentage of infants with Down syndrome are born to mothers under the age of 35?

_____ %
9. Individuals with Down syndrome cannot have children.
 - a. True
 - b. False
10. Adults with Down syndrome are like children with Down syndrome.
 - a. True
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11. Which of the following causes Down syndrome?
 - a. A missing 11th chromosome
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 - e. Childhood leukemia
 - f. Visual impairments
 - g. Greater than average height
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 - i. Baldness
 - j. Congenital heart defects
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Down Syndrome Posttest – Answer Key

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c. 95 d. 66
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x John Langdon Down
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80 %
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a. True **b. False**
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a. True **b. False**
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c. Birth trauma during delivery
d. A full or partial extra copy of chromosome 21
12. Which risks are higher for infants with Down syndrome compared to those infants without Down syndrome?
a. Increased risk of SIDS
b. Alzheimer's disease
c. Cerebral palsy
d. Club foot
e. Childhood leukemia
f. Visual impairments
g. Greater than average height
h. Hearing impairments
i. Baldness
j. Congenital heart defects
k. Thyroid conditions

Supplementary Activities

In addition to the activities and discussions presented in this curriculum, consider the following ideas to meet the needs of longer class periods or different groups of participants.

- Survey friends to find out what they know about Down syndrome and/or about caring for an infant with Down syndrome.
- Create a poster illustrating the common physical characteristics of Down syndrome.
- Develop a public service announcement persuading pregnant women to seek prenatal medical care as early as possible, especially if they are in a high-risk category.
- Develop an informative brochure targeted at the general public that presents information about Down syndrome.
- Write a blog after interviewing someone who has had a baby with Down syndrome or has a family member with Down syndrome.
- Invite an OB-GYN, pediatrician, counselor, social worker, or special education teacher to talk about the importance of early interventions for children with Down syndrome. Prepare a written or oral report pertaining to current topics and discussion in the area of Down syndrome. Such topics could include:
 - Adult life and relationships
 - Autism and Down syndrome
 - Behavior
 - Dental care
 - Early intervention
 - Education and inclusion
 - Family/Community Relationship
 - Hearing
 - Memory/Alzheimer's
 - Motor skills and physical education
 - Number skills and math
 - Prenatal screening and testing
 - Delivery of diagnosis
 - Reading and literacy
 - Sexuality
 - Speech and language
 - Sleep
- Plan a local event for World Down Syndrome Day, observed on March 21.

Down Syndrome Organizations and Web Sites

The following organizations provide helpful information about Down syndrome. These web sites are not managed, monitored, or endorsed by Realityworks, Inc. Realityworks makes no representation for the information presented on these sites or their compliance with applicable laws or regulations.

- National Down Syndrome Society
<http://www.ndss.org>
- National Institute of Health
<https://www.nichd.nih.gov/health/topics/downsyndrome>
- Kids Health
http://kidshealth.org/parent/medical/genetic/down_syndrome.html
- National Association for Down Syndrome
<http://www.nads.org/>
- World Health Organization
<https://www.who.int/genomics/public/geneticdiseases/en/index1.html>
- Centers for Disease Control
<https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html>
- Mayo Clinic
<https://www.mayoclinic.org/diseases-conditions/down-syndrome/symptoms-causes/syc-20355977>

References

The following were used throughout this curriculum:

Diary, P. (2017, December 13). Top 10 myths and truths about the people with Down syndrome disorder. Retrieved February 20, 2019, from <https://mentalandbodycare.com/top-10-myths-and-truths-about-the-people-with-down-syndrome-disorder/>

Down Syndrome Fact Sheet – National Down Syndrome Society. (2017, July). Retrieved February 20, 2019, from <http://www.ndss.org/wp-content/uploads/2017/08/NDSS-Fact-Sheet-Language-Guide-2015.pdf>

World Health Organization. (2019). Genes and Human Disease. Retrieved February 02, 2019, from <https://www.who.int/genomics/public/geneticdiseases/en/index1.html>