

BOY OR GIRL?

STUDENT BOOK:	Chapter 8, pp. 258–261
CONCEPTS:	ASSISTED REPRODUCTION
METHOD:	FORMATION OF AN OPINION

There are various natural methods for choosing the sex of an unborn child. These include following a special diet, keeping track of body temperature curves and determining the time of ovulation during the menstrual cycle. But these natural methods are inefficient and sometimes are no help for couples with fertility problems. This is why more sophisticated methods have been developed, one example being in vitro fertilization, which was originally intended to screen for serious genetic diseases. They can also be used for gender selection. What do you think of using this type of method to choose the sex of an unborn child? Should parents have the right to make such a choice?

IDENTIFYING THE CONTROVERSY AND EXPRESSING YOUR VALUES

1. What question does this issue raise?

2. Are you in favour of using biotechnologies to choose a child's sex? Why?



Name: _____ Group: _____ Date: _____

3. Do you feel the same if natural methods, not biotechnologies, are used to choose a child's sex? Explain your answer.

4. Do you see any benefits to the possibility of choosing the sex of one's future child?

5. Do you see any disadvantages in the possibility of choosing the sex of one's future child? Why?



Name: _____ Group: _____ Date: _____

GATHERING INFORMATION

Read pp. 258–261 in your student book and the appendix to this activity for help in answering questions 6–8.

As you read, complete the table on the next page. Cite your source for each answer you find for questions 6–8.

6. Name four techniques used to help women become pregnant.

- _____
- _____
- _____
- _____

7. What are the advantages of being able to choose the sex of one's future child? Name at least two of them.

8. What problems arise from using biotechnologies to choose a baby's sex? Name at least three such problems.



Name: _____ Group: _____ Date: _____

REFLECTING ON YOUR APPROACH

10. What other information would help solidify your position in this controversy?

11. Has your opinion about the use of biotechnologies for gender selection changed since you began this activity? Explain why.



APPENDIX

1. INFORMATION ON BIOTECHNOLOGY TECHNIQUES

Boy or girl? Almost half of the fertility clinics in the U.S. that provide preimplantation genetic diagnosis (PGD) also give couples the option of choosing the sex of their unborn child. ...

Most couples turn to PGD for good reasons, one being to avoid giving birth to the carrier of a serious disease. ... As a result, thousands of babies will never develop fatal and/or serious genetic diseases. ... However, 42 percent of the institutions providing preimplantation genetic diagnosis acknowledge having used the procedure for non-medical reasons. About half of them say they would allow gender selection for a second, third or fourth child. ... Many countries prohibit PGD for non-medical purposes and many people, including some from China and Canada, travel to the U.S. for gender selection.

Source: *La Presse Canadienne*. September 21, 2006,
accessed August 20, 2009. [Translation]



2. TECHNOLOGY RAISES ETHICAL CONCERNS

Emerging technologies that involve reproductive health offer the promise of better care and services and improved quality of life. However, new technology can often raise unanticipated ethical concerns, including the potential for abuse and misuse.

One central question is whether scientific advancements will be equally available to rich and poor individuals and in rich and poor nations. Another ethical concern is how technologies will be used: for altruism or for profit?

Relatively new reproductive health technologies that are becoming more widely available include the use of ultrasound for determining the sex of an unborn fetus, new ways to achieve long-term or permanent contraception, treatments for people living with HIV/AIDS and the use of in vitro fertilization (IVF).

Sex selection

Throughout the world, ultrasound technology has been used to produce images of the fetus in the womb, aiding in the diagnosis of genetic disorders. Ultrasound scans also can reveal the sex of a fetus and some couples have used this information to abort unwanted female fetuses.

Abortion is a controversial procedure even in countries where it is safe, legal and widely available. When abortion is used for sex selection, the controversy intensifies. Several studies have shown that induced abortion has been used for this purpose. In China many pregnant women use ultrasound to determine the sex of their fetus. Using ultrasound for sex selection is illegal, but participants in the Family Health International (FHI) study acknowledged it does occur. ...

Other emerging technologies

In industrialized nations, assisted reproductive technologies (ART) involve the use of expensive equipment and tests to help infertile couples conceive a child. One of the technologies is in vitro fertilization, in which egg and sperm cells are united outside the body, then fertilized eggs are implanted in a woman's uterus. While the technique has helped many couples give birth to healthy children, it also has raised serious questions. Should such technologies be available only to married couples or to single women as well? Should fertile women and men be allowed to donate eggs and sperm so that infertile couples can have children? Should these donors be paid? Once an egg is fertilized, is the resulting group of cells a potential person or a person with the same rights as any other?

Another controversy in assisted reproductive technologies is "selective reduction." Because several embryos are implanted to increase the couple's chance of having a baby, multiple births can occur. Some couples have chosen selective reduction instead—the destruction of a certain number of embryos by injection of potassium during the first trimester of pregnancy.

In the future, scientists predict they will be able to screen human embryos for chromosomal abnormalities and genetic diseases prior to implantation. They also expect to be able to alter genetic material. While some scientists suggest this could prevent diseases such as diabetes, hypertension and schizophrenia, others say the procedure could be misused by parents seeking children with specific features, such as eye and hair colour or higher intelligence.



2. TECHNOLOGY RAISES ETHICAL CONCERNS *(continued)*

A new technique developed at the Genetics and IVF Institute in the United States may be able to guarantee a child's sex. The technique involves isolating sperm that will produce a female embryo (the sperm that carry an X chromosome). Currently being evaluated in clinical trials, the technique has the advantage of allowing couples to determine the sex of their child before the egg is fertilized, not after, and could potentially be used to prevent genetic disorders such as hemophilia or muscular dystrophy. These conditions are caused by defects in the X chromosome and primarily affect male children. Other scientists have speculated that the new technique could become a tool for sex selection.

Source: Barbara Barnett, *Family Health International (FHI)*, Vol. 21, No. 2, 2001.