Birthstones

Presenter Notes
Introduction: Provide a brief introduction. Perhaps explain what got you interested in the industry, or what you find intriguing about gems and jewelry, or what subjects in school helped you to become who you are today. This is an opportunity to connect with the audience and to help them feel comfortable.

What is a birthstone? *Allow time for answers.*

Do you know YOUR birthstone? *Allow time for answers.*

Did you know that some months have more than one birthstone? *Allow time for answers.*

We’ll look into these questions and much more during the presentation. Please ask any questions you think of!

*Click to go to next slide*
While most consumers are familiar with dark red garnets, many do not realize that they come in almost every color including a color-change variety that can be blue in daylight.

The name *garnet* is derived from the word *pomegranate*, because the deep red varieties of the gemstone resemble the seeds of the pomegranate fruit.

A green variety, called *tsavorite*, was found in 1971 in Kenya’s Tsavo National Park.

There are no treatments done to garnets on a commercial basis.

Garnets range from 6.5 to 7.5 on the Mohs hardness scale.
Amethyst is the most valuable variety of quartz.

Colors range from violetish purple through purple to reddish purple. The most prized amethysts are an intense reddish purple with even coloration.

Heat treating overly dark stones can lighten them and make them more attractive.

Exposure to heat or extensive exposure to light can cause the color to alter or fade.

The hardness of amethyst is 7 on the Mohs scale and the toughness is good.

Early Greeks associated the gems with the wine God Bacchus. The color has also represented royalty.

Siberia was the most important amethyst source until the twentieth century when large production came from Brazil. Today, Brazil, Uruguay, Zambia, and Arizona are the most significant sources.
Aquamarine derives its name from Latin for “sea water.”

The gem is usually greenish blue and light in tone. Intense pure blue colors are most highly valued.

Aquamarine is a variety of the mineral beryl, along with emerald.

Hardness is 7.5 to 8 on the Mohs scale, and toughness is good.

Most aquamarine is heat treated to make the color less green and a purer blue. The treatment is stable under normal wear and is undetectable.

Brazil, China, Pakistan, Vietnam, and several sources in Africa are the most important.
Bloodstone is a type of jasper with a very distinctive look: red to brownish red flecks, colored by iron oxide, scattered across a dark green background.

Common in men’s signet rings of yesteryear, it’s still popular in men’s jewelry today.

Bloodstone deposits abound in Australia, Brazil, China, India, and the U.S.

Bloodstone is also chosen for Christian-themed jewelry because the red blotches against the green field are said to symbolize the blood of Jesus falling at the foot of the cross.
Diamonds have been sought after by kings and queens, the rich and the powerful since the first source was discovered in ancient India.

Large diamond deposits discovered in South Africa in the late 1800s hugely increased availability.

The diamond engagement ring has become a standard throughout much of the world.

Today, diamond production in Botswana, Democratic Republic of the Congo (DRC), South Africa, Namibia, Russia, Australia, and Canada provides diamond jewelry to consumers around the globe.
Emerald is considered by many to be the finest green-colored stone, and it’s certainly the most famous. Since the time of ancient Egypt, royalty such as Cleopatra have desired emerald. The Spanish conquistadors fought brutal wars with South American tribes like the Muzo to learn the secret locations of their mines.

The most desirable emerald colors are bluish green to green, with strong to vivid saturation and medium to dark tone.

The most-prized emeralds are highly transparent.

Their color is evenly distributed, with no eye-visible color zoning.

If the hue is too yellowish or too bluish, the stone is not emerald, but a different variety of beryl, and its value drops accordingly.

This crystal is from Colombia, the major supplier of emerald to the U.S. Many dealers consider fine-quality Colombian emeralds to have the best color of any source.

As is the case with many gem deposits, a small percentage of material is fine color, but the majority of the production is commercial quality.
Pearls are one of the most romantic and intimate gems.

Almost all pearls on the market today are cultured and must be described as such.

Akoya cultured pearls such as those seen here come from Japan and China and are saltwater. They are the most familiar cultured pearls and are usually round, with white, silver-white, very light pink to light cream body color. A second color may seem superimposed over the body color called overtone such as rose overtone on a white body color. Sizes do not usually get above 10 mm.

The quality of cultured pearls is judged by five factors:
Color
Luster
Shape
Size
Nacre quality

Cultured pearls might be dyed or irradiated to create unnatural colors or black. Coatings are sometimes used to enhance the luster.
Natural pearls are rare; most pearls are cultured by implanting a bead into the mollusk and letting the mollusk coat the bead with nacre for up to two years before the pearl is harvested.

These natural pearls are from the Sea of Cortez, also known as the Gulf of California.

Wearing pearls is believed to bring clarity to the mind.
Alexandrite was discovered in 1830 in the Ural Mountains of Russia. It was named after Czar Alexander II.

Alexandrite is also found in Brazil, East Africa, and Sri Lanka. Fine-quality alexandrite is very rare, especially in sizes over 1 carat.

Alexandrites display a stunning color change under different lighting, going from green in daylight and fluorescent light (left) to red or raspberry in incandescent light (right).

This color combination prompted the romantic description, “emerald by day, ruby by night.”
According to Hindu mythology, moonstone is made of solidified moonbeams. Its internal structure scatters light and creates the shimmering effect known as adularescence.

The best quality moonstone has a colorless body color and blue adularescence.

Sources include India, Myanmar, Tanzania, Madagascar, and Sri Lanka.
The Sanskrit word for ruby is ratnaraj, which means king of gems.

The finest colors are vivid red to slightly purplish red in medium to medium-dark tone.

Finest quality rubies come from Myanmar, the Himalayas, northern Vietnam, and African countries like Mozambique, Madagascar, and Malawi; and the largest production comes from Mozambique.

Ruby is the red variety of the mineral corundum (sapphire is the blue variety and fancy sapphire comes in many colors). Corundum’s hardness of 9 on the Mohs scale; excellent toughness, and outstanding stability make it a very durable stone.
The ancient Egyptians called peridot the gem of the sun.

Major sources include the San Carlos Apache Reservation in Arizona (largest producer), Myanmar, and Pakistan. The latter two are known for fine-quality material.

Rarely, peridot can have an extraterrestrial source, being contained in meteorites that have fallen to Earth.

The color range for peridot is narrow, from a brown-green color to yellowish green to pure green. Yellowish green is the most common peridot color seen in jewelry.
Spinel comes in a painter’s palette of colors: orange, intense “stoplight” red, vibrant pink, and all shades of purple, blue and violet through bluish green.

Fine specimens became the treasured property of kings and emperors. In ancient times, the mines of central and southeast Asia yielded exceptionally large spinel crystals which became known as Balas rubies. Some of these stones were the treasured property of kings and emperors, often passing through many hands as spoils of war. As a result, some of the world’s most illustrious “rubies” are actually spinel.

Spinel is believed to promote health.
Carvers make the most of the alternating white, black, and brown bands in sardonyx to create decorative cameos.

Sardonyx is a variety of chalcedony, as is agate.
Sapphire is the blue variety of corundum (ruby is the red variety).

Sapphires come from several sources and in many shades of blue. The finest stones are intense medium to medium-dark slightly violetish blue to blue.

Kashmir has produced some of the finest quality stones, but is more of a historical source since no significant production has come out for over a half century. The color can be intense with a velvety or sleepy appearance caused by tiny inclusions scattering light.

Burmese sapphires from Myanmar have a rich royal blue color.

Sapphires from Sri Lanka tend to be a little lighter and more brilliant.

During the middle ages, sapphires were often worn by clergy because they symbolized heaven.

The vast majority of blue sapphires on the market have been heat treated to improve their color and, possibly, their clarity. The treatment is stable and often detectable by a trained gemologist.
Besides blue sapphire and ruby, the corundum family also includes so-called “fancy sapphires.”

They come in violet, green, yellow, orange, pink, purple, and intermediate hues. There are also “parti-colored” sapphires that show combinations of different colors.

Some stones exhibit the phenomenon known as color change, most often going from blue in daylight or fluorescent lighting to purple under incandescent light.

Sapphires can even be gray, black, or brown.

Both blue and fancy sapphires come from a variety of exotic sources including Madagascar, Tanzania, Sri Lanka, Myanmar, and Australia.
Opal is known for its unique display of flashing rainbow colors called play-of-color.

There are two broad classes of opal: precious and common. Precious opal displays play-of-color, common opal does not.

Australia is the source of most of the world's fine opal.

Many cultures have credited opal with supernatural origins and powers. Arabic legends say it falls from the heavens in flashes of lightning. The ancient Greeks believed opals gave their owners the gift of prophecy and guarded them from disease. Europeans have long considered the gem a symbol of hope, purity, and truth.
Tourmaline offers those born in October a huge variety of colors to choose from. Very few gems match tourmaline’s dazzling range of colors. From rich reds to pastel pinks and peach colors, intense emerald greens to vivid yellows and deep blues, the breadth of this gem’s color range is unrivalled. In fact, watermelon tourmaline is green on the outside and a delicious pink on the inside.

Important sources include Brazil, Sub-Sahara Africa, Myanmar, Pakistan, Afghanistan, and the U.S. (San Diego County and Maine).
Topaz actually has an exceptionally wide color range that, besides brown, includes various tones and saturations of blue, green, yellow, orange, red, pink, and purple.

Colorless topaz is plentiful, and is often treated to give it a blue color.

Treated blue topaz is available in a variety of shades from light to dark blue. The treatment is stable and the stones are very reasonably priced.

The name topaz comes from the mysterious island Topazios in the Red Sea. The island was a source of peridot in ancient times.

The ancient Greeks believed that topaz gave them strength.

In Europe during the Renaissance (the period from the 1300s to the 1600s) people thought that topaz could break magic spells and dispel anger.
Citrine—the transparent, pale yellow to brownish orange variety of quartz—is rare in nature.

Citrine provides an attractive color at a very reasonable price. The most valuable color is reddish orange.

Most citrine on the market started out as pale color amethyst and was heat treated to citrine color. The treatment is stable under normal wear.

Brazil is the major source.
Zircon occurs in an array of colors. Its wide and varied palette of yellow, green, red, reddish brown, and blue hues makes it a favorite among collectors as well as informed consumers.

Zircon is a natural stone (not to be confused with synthetic cubic zirconia or CZ). The most popular color is blue, which is created by heat treatment and can fade over time.

Many other colors are available but rarely seen in jewelry.

In the Middle Ages, this gem was thought to induce sound sleep, drive away evil spirits, and promote riches, honor, and wisdom.
Color is turquoise’s prime virtue. It can be greenish blue, bluish green, or even yellowish green, depending on its iron content.

The most highly-valued turquoise is an intense, evenly distributed, medium blue, known in the trade as Persian blue.

Various treatments include impregnation with plastic and dyeing. Neither are permanent, but they can hold up well if cared for properly.

Major sources include Southwestern U.S., China, and Iran, which is more of a historical source for fine qualities.

Archaeological evidence shows that ancient Egyptian royalty wore turquoise jewelry over 7,000 years ago. It was prized by Chinese carvers over 3,000 years ago and was a ceremonial gem for the native American tribes of the Southwestern U.S.
Although not a standard birthstone, tanzanite has been promoted by some jewelry organizations, including the American Gem Trade Association, as an alternative for December.

Tanzanite ranges from pale (most common in smaller sizes) to deep and intense. The color is created by heat treating the brownish mineral zoisite to more attractive colors. The treatment is stable under normal wear.

The gem’s only known commercial source is Tanzania. It entered the jewelry market in the late 1960s.
**Slide 1**
Photo: GIA

**Slide 2**
Photo: Robert Weldon/GIA
Courtesy: Farooq Hashmi, Intimate Gems

**Slide 3**
Photo: Robert Weldon/GIA

**Slide 4**
Photo: Robert Weldon/GIA
Courtesy: Thomas M. Schneider

**Slide 5**
Photo: Robert Weldon/GIA

**Slide 6**
Photo: Robert Weldon/GIA

**Slide 7**
Photo: Robert Weldon/GIA

**Slide 8**
Photo: Eric Welch/GIA

**Slide 9**
Photo: Robert Weldon/GIA
Courtesy: KCB Natural Pearls

**Slide 10**
Photo: Robert Weldon/GIA

**Slide 11**
Photo: Robert Weldon/GIA

**Slide 12**
Photo: Robert Weldon/GIA

**Slide 13**
Photo: Robert Weldon/GIA

**Slide 14**
Photo: Robert Weldon/GIA

**Slide 15**
Courtesy The Walters Art Museum, Baltimore

**Slide 16**
Photo (left): Robert Weldon/GIA
Photo (middle): Robert Weldon/GIA
Photo (right): Robert Weldon/GIA
Courtesy Anil Gupta, Kris Gem International, Inc.

**Slide 17**
Photo: Robert Weldon/GIA

**Slide 18**
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**Slide 19**
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**Slide 20**
Photo: Robert Weldon/GIA

**Slide 21**
Photo: Robert Weldon/GIA

**Slide 22**
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**Slide 23**
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**Slide 24**
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