LESSON INTENT

- Students learn how to look closely at a painting from the Aga Khan Museum’s Permanent Collection, to analyze its components, and then to use it as inspiration for their own large-scale collaborative mural.

LEARNING GOALS

- Make accurate observations about the elements and principles of design in a painting (Visual Arts).
- Explain how a painting can convey information about how people lived, held certain beliefs, and formed communities based on those beliefs, in the time of its making (Social Studies).
- Demonstrate an understanding of the capacity of a painting to tell a story (Language).
- Demonstrate the ability to use units of measurement to calculate length and to display the results in chart form (Mathematics).
- Demonstrate an understanding of the research process and how to use it by finding references to fish and wildlife in the Bay of Bengal and using them to identify fish in a painting (Science).
Figure 43: A Sea Serpent Swallows the Royal Fleet
Folio from a dispersed Golshan-e 'Ishq
(Rose Garden of Love) by Nusrati
Deccan, India, ca. 1670
Opaque watercolour and gold on paper
39.3 x 23.5 cm
AKM167
The disaster of a fleet swallowed by a giant sea serpent unfolds before the viewer’s eyes: one boat is already in the maw of the monster, while two men futilely attempt to wound the creature with an axe and a bow and arrow. The rest of the fleet, and the prince, in the big ship in the centre, look on in horror. The outcome seems assured – the coils of the beast are wrapped around the boats, breaking masts and throwing men overboard. The sailors all raise their hands in prayer, as does the prince, who sits on a colourful fabric-covered throne.

The painting in Figure 43 has been identified as an illustration from the Golshan-e ‘Ishq, a heroic epic written in 1657 by the poet Mian Nusrati for Sultan ‘Ali II ibn Muhammad ‘Adil Shahi (reigned 1656–72). Nusrati was the court poet and incorporated words in Persian, Arabic, and Marathi into his works, which were otherwise in the Urdu spoken in the Deccan region of India. The poem recounts the story of the Hindu Prince Manohar, drawing on characteristic romantic themes: travel through strange and foreign lands, danger from fantastic creatures, and journeys by sea. The last theme, which appears consistently in other Indian epics, may take its inspiration from the thriving trade between the people of the Deccan and those in Persian, Arab, and Ottoman lands.

The city of Bijapur was the seat of the Adil Shahis from 1489 until 1689, and this painting, like the poem it accompanies, shows the diversity of cultures and traditions that flourished in the region. While the Adil Shahis were great patrons, it is likely that this book was made for a wealthy nobleman sometime in the last quarter of the 17th century, just as the dynasty was absorbed into the Moghul Empire.
ONTARIO MINISTRY CURRICULUM CONNECTIONS, GRADES 1–3

THE ARTS: VISUAL ART

• Identify the elements of design.
• Identify contrast (Grade 1), repetition (patterns) (Grade 2), and variety (Grade 3) as three of the eight principles of design that are used with the elements of design to make art.
• Reflecting, responding, and analyzing: Apply the critical analysis process to communicate feelings, ideas, and understanding in response to a variety of works of art and art experiences.
• Exploring forms and cultural contexts: demonstrate an understanding of a variety of art forms, styles, and techniques from the past and present, and their social and/or community contexts.
• Demonstrate an understanding of composition, using principles of design to create narrative works of art or works of art on a theme or topic.

MATHEMATICS: MEASUREMENT, ATTRIBUTES, UNITS, AND MEASUREMENT SENSE (GRADE 1)

• Estimate, measure, and describe length, area, mass, capacity, time, and temperature, using non-standard units of the same size.
• Compare and order objects by their linear measurements, using the same non-standard unit.
• Describe, through investigation using concrete materials, the relationship between the size of a unit and the number of units needed to measure length.

MATHEMATICS: DATA MANAGEMENT AND PROBABILITY (GRADE 1)

• Collect and organize categorical primary data and display the data using concrete graphs and pictographs without regard to the order of labels on the horizontal axis.

SCIENCE: UNDERSTANDING LIFE SYSTEMS: NEEDS AND CHARACTERISTICS OF LIVING THINGS (GRADE 1)

• Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.
SCIENCE: UNDERSTANDING BASIC CONCEPTS

- Identify the physical characteristics (e.g., size, shape, colour, common parts) of a variety of plants and animals (Grade 1).
- Describe ways in which living things, including humans, depend on air and water.

LANGUAGE: READING FOR MEANING

- Demonstrate understanding of a text by retelling the story or restating information from the text, including the main idea.
- Use stated and implied information and ideas in texts, initially with support and direction, to make simple inferences and reasonable predictions about them.

MATERIALS

- Overhead projector or data projector connected to a computer to project the image of A Sea Serpent Swallows the Royal Fleet.
- Disc, memory stick, overhead transparency with image of A Sea Serpent Swallows the Royal Fleet.
- A roll of white paper that is cut to size for the class collaborative mural. Alternative suggestions for the mural ground could be fabric paper or white canvas primed with gesso.
- Sketchbooks, journals.
- Pencils.
- White tissue paper cut in different sizes for drawing the fish, people, and ships.
- A class set of permanent Sharpie markers.
- A range of coloured permanent markers.
- Gel medium (matte) commercially available from art stores (also available in the TDSB Board Stock catalogue).
- Medium-sized paintbrushes for the application of the gel medium.
- Small detail paint brushes.
- Metallic permanent markers.
- A selection of index cards, blocks, measuring sticks, or string for students to choose from for the measuring activity.
- Plastic drop cloth to protect the floor.
- Aprons/art smocks for the students.
- Acrylic paint mixed with white. Red, yellow, blue, and white for the underpainting of the sea and sea serpent.
- Collage materials, e.g. patterned gift wrap, origami paper, sequins.
- Glue sticks.
- Images of fish found in the Bay of Bengal close to the Bijapur region of India: skipjack tuna, large skipjack, yellowfin tuna, eastern little tuna, frigate tuna, reef fish (students will be able to look closely at these images for their drawings of fish).
THE CREATIVE PROCESS

CHALLENGING/INSPIRING

Drawing the sea serpent using a projected traced image:

- The teacher projects an overhead transparency or projected digital image of A Sea Serpent Swallows the Royal Fleet onto a wall that has been covered with white paper taped together to become the mural backing for this large collaborative class project. (White gessoed canvas or fabric paper are alternative choices for this process.)
- The activities will be completed over a number of days, with students working in small groups to facilitate the process.
- The students all look critically at the painting and engage in a discussion of the many details they see. The teacher lists the students’ observations and responses.

**Teacher prompts:**
- If you could give this painting your own title, what would you call it?
- Do you think this is a true story?

The discussion moves to a more focused discussion of the Visual Arts Elements of Design and the building of the students’ visual vocabulary.

**Teacher prompts:**
- What is a focal point? Where do you think the focal point is in this painting?
- Colour: How has the artist used colour in the work?
- Contrast: What is big and what is small in this painting?
- Patterns: Find five different patterns in this painting. How many patterns can you find?
- Variety: Find five different kinds of fish in this painting. How many kinds of fish can you find?
- Look for strong contrasts in this painting (e.g. use of different lines, shapes, values, and colours to create interest [bright or light colour values, dark colour values]).
Using a science lens, students identify the physical characteristics of the sea serpent.

**Teacher prompts:**
- What is the sea serpent covered in?
- Why do you think sea serpents need this covering?

In small groups, students are invited up to the projected image to trace the contour of the sea serpent and then trace over the scales and fangs using thick black markers. Because the image is cut off in the original, students are encouraged to complete the outline of the sea serpent.

(Safety Note: During the enlarging process, students will probably need to stand on a low table to draw the image, so safety concerns must be a consideration during this phase of the work.)

The projector is switched off and the drawing of the sea serpent is revealed. The drawing is placed on the floor in readiness for devising a plan to calculate the measurement of the sea serpent.

(Please note that the focus is exclusively on the sea serpent drawing at this stage — the water, fish, mermaids, and mermen, as well as the interior details of fish, ships, sails, rigging, people, and all the rich patterning will be considered later.)
IMAGINING/GENERATING

Measuring the sea serpent:

- Students are encouraged to suggest different units of measurement and to decide on one that will be used to estimate the length of the sea serpent, i.e. straws, index cards, blocks, measuring sticks, string.

Teacher prompts:

- How big do you think this sea serpent is?
- If you unwound the sea snake and stretched it out to form a straight line, how many big ships would you be able to fit on the line?
- If you used the smaller ships, would there be more or fewer ships?
- How could we show this so others would understand your problem-solving?

Figure 44:
A chart showing relative lengths of the sea serpent and the boats.
PLANNING/FOCUSING

In their groups, the students devise a problem-solving model by:

- Understanding the problem.
- Making a plan.
- Carrying out the plan.
- Looking back at the solution and communicating their findings.

Once the students have measured the sea serpent, they compare and order objects using the same non-standard unit (Note: The mathematical processes of problem-solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing, and communicating, as well as finding enjoyment in a task, are all inherent in this activity).

EXPLORING/EXPERIMENTING

Looking closely at the painting for information:

- Revisiting the story and looking at the painting. Students decide on the fish and sea creatures they are going to create to populate the sea around the sea serpent. A discussion of the mermaids and mermen and all the interesting small details can happen at this point.
- For greater cultural relevancy, showing students images of fish that are found in the Bay of Bengal close to Bijapur, India, where this painting was created, and having photocopies of these for the students to look at closely to observe, shape, pattern, and details will heighten their perception as they begin to make preliminary drawings of the fish in their journals/sketchbooks.
- The students are going to create their own interpretations of the creatures, people, and the ships. Preliminary sketching in the student’s sketchbooks/journals is encouraged. Students engage in a discussion about who the people in the boats are.

Teacher prompts:

- If this painting were painted today, what would the people be wearing?
- Students can draw directly on the mural or use the suggested tissue paper collage drawing method below.
PRODUCING PRELIMINARY WORK

Drawing the details, referencing *A Sea Serpent Swallows the Royal Fleet* painting, and also looking at photographs or photocopies of fish as stimulus, will enrich the quality of the drawings.

- After a number of preliminary drawings in the sketchbooks, the teacher gives the students pieces of precut white tissue paper in a range of sizes so the students know what scale they wish to use for each drawing. They are encouraged to “fill the page,” to create good-sized drawings based on careful looking.
- Preliminary drawings can be done in pencil and then traced over with permanent markers for this drawing activity.

**Teacher prompts:**

- Only outline your drawings — you will be able to colour them later.
- Scale will be important in deciding the size of the ships that will be collaged onto the white paper that already has the outline of the sea serpent. Students decide in groups who will re-create the ships and what size they will be. (Note: The precut white tissue paper becomes an indicator to help with deciding on a relative scale.)
- The role of the teacher during this phase is to continue to ask questions, provide numerous varied learning opportunities, support the learning needs and experiences of the students, and give descriptive feedback and create opportunities for reflection and revision.

Once the students have created drawings of the people who will be on the ships, the ships and masts, the fish, mermaids, etc., it is time to place them on the large white paper to see how they can be arranged. Students sit around the paper as they contribute their pieces and discuss the placement of these drawings.

**Teacher prompts:**

- Do we have enough people, will all the drawings fit, and can we overlap some of them?
- Cut out these tissue paper drawings close to the outlines in readiness for them to be collaged onto the large paper.

REVISING AND REFINING

**Painting the background in readiness for the collage:**

- Prior to pasting the tissue paper outline drawings onto the white paper, a light background colour for the sea serpent and a colour for the water in the background are blocked in by the students, using acrylic paint. Acrylic paint can be thinned down for easier paint application. Larger brushes are recommended for blocking out these areas.
- The scales and patterning on the sea serpent can now be enriched with marker and metallic paint.
Collaging the drawings onto the mural

- Apply a thin layer of gel medium in a small area to the water and then assist the students as they carefully paste their fish, mermaids, and mermen onto the water. The tissue paper bonds with the gel medium and merges with the paint surface below so that the tissue paper almost disappears. (The teacher can seal the tissue paper with another layer of gel medium, since this is a delicate process if the tissue is still wet!)
- Have the students arrange the ships in the interior of the sea serpent and then add the people.
- The composition is now ready for details like the addition of flags, hats, weapons, and patterning, using paint, pattern from magazines, gift wrap, etc., to embellish the mural.
- Small paintbrushes, marker, and glue sticks will help facilitate this part of the collaboration.
- A gold border surrounds the original painting; discussions about a possible frame and how to measure and decorate it are expanded opportunities for this project.

PRESENTING/PERFORMING/SHARING

Promote student conversations about the part of the work of art they have enjoyed most.

- What was the most important part of learning for them?
- Have the students suggest how the story ends.

Teacher prompts:

- What happens after this scene you have created?
- Stimulate discussion on a range of scenarios and devise possible endings and resolutions to the story. Encourage collaborative sharing about the process the students have followed and discussion about where the work should be installed.

REFLECTING/EVALUATING

Students and teacher provide descriptive feedback. Further learning goals, success, opportunities, and next steps are suggested. The teacher evaluation is based on a body of evidence of learning collected over time.
### SUCCESS CRITERIA AND ACHIEVEMENT CHART CATEGORIES

<table>
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<tr>
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<td>How well did the student demonstrate an understanding of techniques from the past and present, and their social and/or community contexts? Did the student use his/her sketchbook/visual journal to create preliminary drawings using the photocopies of fish as stimulus? To what degree does the student understand how to estimate, measure, and describe length, using non-standard units of the same size?</td>
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<td>Was the student able to communicate ideas in a logical well thought out manner orally and in his/her work of art? Did the student participate in the discussion of the painting and reflect, respond, and apply the critical analysis process to communicate feelings, ideas, and understanding?</td>
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<td>Application</td>
<td>Was the student able to communicate ideas in a logical well thought out manner orally and in his/her work of art? Did the student participate in the discussion of the painting and reflect, respond, and apply the critical analysis process to communicate feelings, ideas, and understanding?</td>
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LESSON INTENT

- Students learn how to look closely at a painting from the Aga Khan Museum’s Permanent Collection, to analyze its components, and to use it as inspiration for dramatic role play and collaborative dioramas of the scene in the painting.

LEARNING GOALS

- Make accurate observations about the elements and principles of design in a painting (Visual Arts).
- Explain how a painting can convey information about how people lived, held certain beliefs, and formed communities based on those beliefs, in the time of its making (Social Studies).
- Demonstrate an understanding of the capacity of a painting to tell a story (Language).
- Demonstrate an understanding of the elements of drama and how to use them by creating a dramatic interpretation of the painting (Drama).
Bahram Gur, one of the great hero-kings of the Iranian national epic, the *Shah-Nameh*, and a notable heartbreaker, stayed incognito during a visit to the house of a jeweller. Unaware of his guest’s true identity, the jeweller refreshed the well-dressed stranger with a beverage and called for his daughter, Arzu, to play her harp for him. Bahram Gur’s beauty and noble bearing caused the girl to fall hopelessly in love with him, and in her song she compared the stranger favourably with Shah Bahram Gur, to his great but secret delight.
While the simple brick construction of the interior depicted in the painting in Figure 45 is unremarkable, the painter has taken an obvious enjoyment in the depiction of the rich textiles that decorate the jeweller’s house. Hanging panels at left and right serve as doors or room dividers, while a larger piece of striped cloth has been tied up in a swag at the top of the picture frame. Bahram Gur himself, as befits an honoured guest, sits against cushions while holding a goblet.

GOLD IN THE MEDIEVAL WORLD

Gold is a chemical element with the symbol Au. It has been a highly sought after precious metal for coinage, jewellery, and other arts since the beginning of recorded history. Gold has served as a symbol of wealth and a store of value throughout history, and gold standards have provided a basis for monetary policies. The ancient and medieval science of alchemy aimed to create gold by chemical transformations of base materials. It was not until 1941 that this was achieved, not by a chemical but by a nuclear reaction.\(^1\)

During the medieval period, jewellery was worn by men and women for its beauty as well as to signify wealth and rank. Gold was used to decorate architecture, works of art, books, religious artifacts, and other objects.

The webpage “History of Gold in Civilizations — An Overview” charts how during the Early Medieval European period, when the Romans withdrew from Northern and Western Europe under attack from various warlike tribes, Roman gold-working styles that had stretched right across the then known world disappeared. In their place came the gold jewellery of the Saxons, Merovingians, Franks, and others.

In the 8th century and later, gold-working skills of the highest quality were re-established, from the amazing wire and granulation work of Fatimid Islamic work to the enameled gold of Western Europe. Gold was the main trading commodity in the Islamic world; mines from Africa to Afghanistan were exploited and even ancient Egyptian tombs were deliberately plundered.\(^2\)
In *Eastern Islamic Lands*, Richard Ettinghausen, Oleg Grabar, and Marilyn Jenkins refer to the vogue for filigree jewellery during the Medieval Islamic period: “The major decorative technique for jewellery in the Medieval Islamic period was filigree. Bracelets, rings earrings, necklace elements, hair, and headdress ornaments and pendants are known, as are amulet cases. The vogue in the eleventh century for such ornaments is corroborated by the drawings in the early copy of al-Sufi’s *Book of Fixed Stars*.”³ (See Figure 47).
Figure 47:
Sagittarius
Folio 102v from a Kitab
Suwar al-Kawakib al-Thabita
(Images of the Fixed Stars)
by `Abd al-Rahman al-Sufi (d. 986)
Isfahan, Iran, 1640s–1650s
Ink, opaque watercolour,
and gold on paper
Folio: 31.4 x 18.3 cm
AKM266
ONTARIO MINISTRY CURRICULUM CONNECTIONS
GRADES 4–6

THE ARTS: VISUAL ART

- Create two- and three-dimensional works of art that express feelings and ideas inspired by their interests and experiences.
- Use a variety of materials, tools, and techniques to determine solutions to design challenges.
- Interpret a variety of works of art and identify the feelings, issues, themes, and social concerns that they convey.

THE ARTS: DRAMA

- Creating and presenting: Engage actively in drama exploration and role play, with a focus on exploring drama structures, key ideas, and pivotal moments in their own stories and stories from diverse communities, times, and places (e.g. use role play to explore the hierarchical structure of medieval society; use “inner and outer circle” to examine moments of conflict and power imbalance in group improvisations on a common theme).

THE ARTS: DANCE AND LANGUAGE

- Demonstrate an understanding of how the language of dance can express ideas and sociocultural beliefs.

LANGUAGE: MEDIA LITERACY

- Demonstrate an understanding of a variety of media texts.

SOCIAL STUDIES

- Compare social organization (e.g. social classes, general political structure, inherited privilege, the status of women).
- Compare aspects of the daily lives of different groups in an early society and explain how differences were related to the social organization of that society.
- Demonstrate the ability to extract information on daily life in early societies from visual evidence.
MATERIALS FOR CREATING THE DIORAMA

- Overhead projector or data projector connected to a computer to project the image of *Bahram Gur at the House of Mahyar the Jeweller*.
- Shoeboxes for creating individual dioramas, or a few larger boxes if students are going to work collaboratively in small groups.
- Popsicle sticks and tongue depressors to be used as armatures for building the cast of characters.
- Fimo, plasticine, or modelling clay for faces, features, and hands.
- Medium- and small-sized paintbrushes for larger and smaller details.
- Gold paint.
- Metallic permanent markers.
- Acrylic paint (Red, yellow, blue, and white).
- Mixing trays.
- A variety of collage materials.
- Glue guns and glue sticks.
- Fabric paper to create the rich swags of drapery in the painting.
- Fabric pieces for clothing, drapery, etc.
- Small feathers, scraps of leather.
- Cardboard.
- Wallpaper.
- String.
- Scissors.
- Markers.
THE CREATIVE PROCESS

CHALLENGING/INSPIRING

Looking for clues in the painting:

- A close study of Bahram Gur at the House of Mahyar the Jeweller will provide opportunities for students to explore issues of culture and diverse identities. Students will be able to draw inferences and implied messages and construct meaning about the image. (A description of the painting at the beginning of this lesson plan will be useful for providing context and background information about the group of people assembled in the jeweller’s house.)
- Some background about gold in earlier times will begin a discussion about decoration, wealth, and personal adornment.

Teacher prompts:

- Why do you think personal adornment was so important in earlier times?
- Who wore the jewellery?
- Where else might you find precious stones being used decoratively?
- Where do you think the gold came from? How was it brought from place to place?

Issues of class, social standing, and hierarchy are clear in the painting.

Teacher prompt:

- What do you notice about the hierarchical structure in this painting and the types of people in it (e.g. servants, artisans, royalty, and the jeweller’s daughter)? Look carefully at the clothing, e.g. the owl-feathered hats worn by the attendants are typical Mongol costume, which indicates that these men have come from afar to work in the home of Mahyar the jeweller. They are also wearing large, square, Chinese-style rank badges on the front of their clothing.

Note: Critical thinking skills include the ability to identify perspectives, values, and issues; detect bias; and read for implicit as well as explicit meaning. In the context of anti-discrimination, critical literacy involves asking questions and challenging the status quo, and leads students to look at issues of power and justice in society (Ontario Curriculum, Grades 1–8 Language, page 28).
PLANNING/FOCUSING

Describing the setting:
- Students describe the setting where the action is taking place. The house, with its richly patterned swags of drapery, is a stage setting for the action that will follow. An extension here would be create a diorama of the scene in a box with the actors as small rod puppets to scale that are anchored to the floor through slits in the stage. This facilitates movement into and out of the scene. The suggested list of materials and textures can be used to create the background for the action onstage and the decoration of the small rod puppets.

EXPLORING/EXPERIMENTING

Students in Grades 4 continue to focus on role play as the foundational component of learning in drama. Process drama, small-group improvisations, partner role play, independent writing in role, and interpretation of simple scripts allow students to develop their ability to maintain focus and sustain belief while they are in a role. Students also learn to enhance their roles and build belief in the fictional context of the drama by using the elements of relationship, time and place, tension, focus, and emphasis in their work.4

Using the elements of drama to create dramatic role play:
- Students and teacher begin to use the Elements of Drama to create a dramatic role play about the incognito visit of Bahram Gur to the house of Mahyar the jeweller. There are eight characters in the painting.
- Divide the class into groups of eight so that each person has a role in the scene. Refer to the painting description for a better understanding of who the protagonists are.

Teacher and students develop the scene using the following principles of drama:
- Role/character: considering in-depth the inner and outer life in developing a character; differentiating between authentic characters and stereotypes; using gestures and movement to convey character.
- Relationship: analyzing and portraying how relationships influence character development/change.
- Time and place: establishing a clear setting; sustaining belief in the fictional setting.
- Tension: using sound, light, technology, and stage effects to heighten tension/suspense.
- Focus and emphasis: using drama conventions to reveal or communicate key emotions, motivations, perspectives, and ideas to the audience.
PRODUCING PRELIMINARY WORK

Point of view:
- What do the students understand about point of view?

Students will use a variety of drama and movement strategies as springboards to a fuller understanding of the image:
- Drama Strategy, “ROLE ON THE WALL”: On chart paper or the smartboard, the teacher draws an outline of a figure (e.g. the jeweller Mahyar). This can be done with all the characters in the story. Students are invited to write words on the inside of the outline that describe what they imagine to be the figure’s values, characteristics, and feelings. On the outside of the figure, have the students write down words or phrases that describe the jeweller as they believe others see him.
- Drama Strategy, “TABLEAU”: A tableau is a frozen picture (like a photograph) that clearly expresses and communicates a thought, feeling, idea, or situation. In role, the frozen statues in the tableau will come alive and introduce themselves to the audience and describe their inner and outer voice: the person they represent to the outside world and the person they are inside. This self-identification is important because some of the characters are misrepresenting themselves, while others are in roles that define their status, and they may have aspirations and dreams that they cannot share.

![Diagram of the inner and outer circle exercise.](image)
• Drama Strategy, “INNER AND OUTER CIRCLE”: A convention used for ensemble sharing of contrasting perspectives related to a drama. Students gather in two circles: an inner circle representing one character in the drama (e.g. Bahram Gur) and an outer circle representing a second character (e.g. the jeweller’s beautiful daughter, Arzu). In role, students as characters describe their reactions and state of mind at a particular point in the drama. Out of role, students share personal reflections with one another as they are given prompts. Students may speak spontaneously or read from a short passage. Typically, the teacher orchestrates the sharing (e.g. by tapping a student on the shoulder when it is that student’s turn to speak) so that the contrasting points of view are highlighted for dramatic effect.

PRESENTING/PERFORMING/SHARING

• Drama Strategy, “MINI SCENES”: The story in the picture is a static one that gives us a glimpse of a moment in time. In their groups, the students now have an opportunity to begin to explore dramatically how they think the story resolves itself. For example:
  o Is Bahram Gur’s true identity revealed? How does this happen? Are any of the minor characters involved in this revelation?
  o Why have the two men in the owl-feathered hats come from afar? What is their role here?
  o Why was the jeweller tricked? How does he respond?
  o What is happening in Arzu’s life 10 years later? Does she still play the harp?
• Have the students share these mini-scenes. Each scene needs to have an introduction or prologue to explain the action the audience will experience.

REFLECTING/EVALUATING

Students and teacher provide descriptive feedback. Further learning goals, directions, opportunities, and next steps are suggested. The teacher evaluation is on the basis of a body of evidence of learning collected over time.
**SUCCESS CRITERIA AND ACHIEVEMENT CHART CATEGORIES**

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<tr>
<td>Knowledge and Understanding</td>
<td>What insights have the students gained from reflecting on the painting? Are they able to make inferences and construct meaning from their observations and research?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Thinking</td>
<td>Were students able to make connections to the image in terms of the hierarchical structure in this painting and the types of people from their prior knowledge of the feudal system?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Communication</td>
<td>Have students been able to make connections from the painting to the use of gold in different contexts in medieval times? How have they related to gold in the context of works of art that they have seen in the Aga Khan Museum?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Application</td>
<td>Were the students able to create a dramatic interpretation of the story of Bahram Gur at the House of Mahyar the Jeweller based on their own interpretation of the painting and the added insights from the Museum documentation, using a variety of drama and movement strategies? Do the small dioramas give an impression of small stage sets? How have the students used the Elements of Design and the Principle of Emphasis in their work?</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
LESSON INTENT

• Students learn how to look closely at a fountain as both a work of art and a functional structure and then use principles of art, as well as those of science, technology, engineering, and mathematics (STEM), to make a small working model of a fountain.

LEARNING GOALS

• Make accurate observations about the elements and principles of design in a three-dimensional work of art (Visual Arts).
• Make accurate observations about the way the patterned tiles and tesserae are arranged according to the principles of symmetry, and how this bears upon the structure of the fountain (Mathematics, Science).
• Demonstrate an ability to create a scaled model by using pattern blocks, grid paper, or dynamic geometry software to create a model of a simple fountain (Mathematics).
• Demonstrate an ability to create a working model of a fountain using problem-solving skills (Science).
• Show how geography can determine technological innovation by researching the history of water use in arid lands (Social Studies, Science).
The fountain in Figure 49 is said to have come from a palace in Cairo, dating from near the end of the 15th century. Indeed, most of the palatial residences of the Mamluk period have disappeared entirely, and the origin of the present fountain is not known. This type of fountain was usually incorporated into a domestic interior; the sound of falling water from its multiple jets would create a comfortable atmosphere of soothing calm.
BACKGROUND TO HYDRAULIC MACHINES

Islamic engineers were active in the construction and development of hydraulic machines for water raising and power supply throughout the medieval period and beyond. Similar activity took place in Europe, India, and East Asia.5

Adequate supplies of water are necessary to sustain life. In the part of the world where the fountain in Figure 49 was made, and in many other regions with Muslim populations, water is a precious and scarce resource. Engineers worked from very early times to manage supplies of water and invented a variety of water-raising machines. The *shaduf* was an early invention; it is a simple machine consisting of a long pole pivoted on a fulcrum with a bucket on one end and a counterweight on the other. The *shaduf* has been in continuous use since ancient Egyptian times.

Two other complex machines are in use based on water wheels: the *saqiya*, the action of which is driven by an animal, and the *noria*, which relies on fast-flowing water that can drive the wheels.
BACKGROUND TO FOUNTAINS

Fountains with many jets, like the one in Figure 49, were fed by gravity, by hydraulic machines, or by underground tunnels known as qanats, which took water from an aquifer to the place where the water was needed. The qanat system is still in use in Iran and parts of Arabia and Central Asia today.

_Kitab al-Hiyal al-nafi‘ah_ (The Book of Knowledge of Ingenious Mechanical Devices) by Ibn al-Razzaz al-Jazari was written in 1206. For the period from ancient times until the Renaissance, it has been called the most important document on machines to come from any cultural area. In it, al-Jazari describes the operation of various clocks, water-raising machines, bloodletting devices (see Figure 20), and fountains. The diagram in Figure 51 shows the operation of a fountain with automatically changing jets.

The dotted line indicates the position of the reservoir when it tips over.

Figure 51: Diagram of the operation of a fountain.
The water supply flows into a reservoir that is mounted at a pivot point. The central tank fills and water shoots up through the central jet. Meanwhile, a small amount of water trickles down into a smaller vessel. When the smaller vessel is full, its weight pivots the reservoir backward and water flows into the side tank. Thus, the central tank empties and water flows from the side tank and up through the side jets. The central jet produces a shape of water called a spear; the side jets produce a shape called a lily, or a shield. What kind of water shape do you think was produced by the fountain in Figure 49?

ONTARIO MINISTRY CURRICULUM CONNECTIONS, GRADES 7–8

VISUAL ARTS

- Creating and presenting: Use a variety of materials, tools, techniques, and technologies to determine solutions to increasingly complex design challenges (Grades 7 and 8).
- Reflecting, responding, and analyzing: Apply the critical analysis process to communicate feelings, ideas, and understandings in response to a variety of works of art and art experiences (Grades 7 and 8).
- Exploring forms and cultural contexts: Identify and describe some of the ways in which visual art forms and styles reflect the beliefs and traditions of a variety of cultures and civilizations (Grade 7).
- Identify and explain some of the ways in which artistic traditions in a variety of times and places have been maintained, adapted, or appropriated (Grade 8).
MATHEMATICS

- Geometry and spatial sense, geometric relationships: Distinguish between and compare similar shapes and congruent shapes, using a variety of tools (e.g. pattern blocks, grid paper, dynamic geometry software) and strategies (e.g. by showing that dilations create similar shapes and that translations, rotations, and reflections generate congruent shapes) (Grade 7).
- Demonstrate an understanding of the geometric properties of quadrilaterals and circles and the applications of geometric properties in the real world.
- Develop geometric relationships involving lines, triangles, and polyhedra, and solve problems involving lines and triangles (Grade 8).
- Geometry and spatial sense, location and movement: Determine, through investigation using a variety of tools (e.g. pattern blocks, polydrons, grid paper, tiling software, dynamic geometry software, concrete materials), polygons or combinations of polygons that tile a plane, and describe the transformation(s) involved (Grade 7).

SCIENCE

- Investigate a working system and the ways in which components of the system contribute to its desired function (Grade 8).
- Relating science and technology to society and the environment: Investigate a working system and the ways in which components of the system contribute to its desired function.
- Use technological problem-solving skills to investigate a system (e.g. an optical system, a mechanical system, an electrical system) that performs a function or meets a need.
- Use appropriate science and technology vocabulary, including mechanical advantage, input, output, friction, gravity, forces, and efficiency, in oral and written communication.
- Understanding earth and space systems, water systems: Use technological problem-solving skills to design, build, and test a water system device that performs a practical function or meets a need.

SOCIAL STUDIES

- Geography: The themes of geographic inquiry: Explain the geographic concept of location/place (e.g. “location” means where a place is and where it is relative to other places; “place” is defined by unique physical and human characteristics).
THE CREATIVE PROCESS

CHALLENGING/INSPIRING

- The focus of this unit is the central role of water in the arid lands of the Islamic world, how fountains were constructed, and where the water came from. The surface decoration of the fountains and the exquisite mosaic designs are other important aspects of this work.
- Students will look closely at the structure of the fountain in Figure 49 and describe how the patterned pieces are arranged according to the principles of symmetry, and how this bears upon its structure. Students will describe the interlocking geometric shapes of the black, white, and blood-red tesserae and then draw a plan of the architectural design of the fountain. Students will identify the shapes they observe, e.g. polygons, hexagonal shapes, etc.

PLANNING/FOCUSBING

- The students have had the opportunity to visit the Aga Khan Museum and look carefully at the placement of the fountain. The fountain itself gives students an opportunity to bring an interdisciplinary lens to the appreciation of the structure. Mathematically, structurally, visually, and geographically it makes connections to culture, civilization, innovation, decoration, aesthetics, and structure.
- Back in the classroom, students can project images of the fountain as they begin to deconstruct the patterns in terms of the geometric relationships involving lines, triangles, and polyhedra.
- Using pattern blocks, grid paper, or dynamic geometry software, the students work in small groups to recreate a scale drawing of the fountain.
- A prompt about the mechanics of how the fountain operated can become the catalyst for the students in their group to devise a system for how the fountain worked in Islamic times and how it would work today, with recent technological advances.
EXPLORING/EXPERIMENTING

- During this phase of the process, students are working across disciplines as they research, experiment with ideas, and begin to formulate proposals for the architectural drawings and structural design.

PRODUCING PRELIMINARY WORK

- Students decide on the scale ratio that they will be working with as they begin to build their prototypes.
- During the collaborations, students define their roles and responsibilities so that they have distinct areas of focus and ownership for tasks throughout the process.
- Process work that documents each stage is an important indicator of progress and documentation.
- Detailed instructions for making a Heron’s Fountain using common materials are available on many websites, including Wikipedia; the students can gather materials and work in small groups to make one out of plastic bottles and tubing.

HOW TO MAKE A HERON’S FOUNTAIN

Gather three plastic bottles with tops. Cut one in thirds and use the top third as bottle A. Bottle A is open to the air. Attach it with a tight seal (Plasticine works well) to an inverted second bottle, B, in which you have cut a hole. Fill bottle B with water and attach to bottle C with a tight seal. Run one pipe (green pipe) from bottle A to bottle C. Run another pipe from bottle C to bottle B (blue pipe) with its top above bottle B’s water level. Run a third pipe from bottle B to bottle A (red pipe). Fill bottle A with water. The water will run into bottle C, then into bottle B, and then will make a fountain out of the orange pipe in bottle A.
Why does this work? Gravity causes the water to flow from A to C. Displacement of the air in C forces the water up into B, and from there into A.

Figure 52: Diagram of a Heron’s Fountain.
PRESENTING/PERFORMING/SHARING

- During the presenting and sharing, the students will be able to talk about their problem-solving and the Scientific Inquiry/Research Skill Continuum they have explored. (See page 15 in the Ontario Curriculum Grades 1–8, Science and Technology.)
- Research includes both primary research, which is done through first-hand, direct observation of objects and processes, and secondary research, which is done by reviewing the work and the findings of others.

REFLECTING/EVALUATING

Students and teacher provide descriptive feedback. Further learning goals, directions, opportunities and next steps are suggested. The teacher evaluation is on the basis of a body of evidence of learning collected over time.

SUCCESS CRITERIA AND ACHIEVEMENT CHART CATEGORIES

<table>
<thead>
<tr>
<th>Achievement Chart Categories</th>
<th>Success criteria for assessment as learning (not for marks) to help students become more observant in making inferences from works of art</th>
<th>Rating Scale/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and Understanding</td>
<td>What insights have the students gained from reflecting on the architectural structure of the fountain? Are they able to bring an interdisciplinary lens to their problem-solving by accessing knowledge from a variety of sources?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Thinking</td>
<td>Have the students been thoughtful in devising a working system for their model of a fountain?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Communication</td>
<td>Have the students been able to use a variety of documentation to describe the problem and how they solved it?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Application</td>
<td>To what degree have students been successful in initiating, planning, and exploring technological problem-solving skills to design, build, and test a water system device that performs a practical function or meets a need?</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
GRADE FOUR:
A Social Studies Focus on Clothing
and Objects in Paintings

Heritage and Identity: Early Societies, 3000 BCE–1500 CE

- Guiding Questions: What are the most significant differences between Canadian society and societies of the past? In what ways did the environment influence clothing in early societies?

Lesson Intent

- Students look at selected paintings from the Aga Khan Museum’s Permanent Collection to analyze and compare clothing and objects from two different parts of the world — Egypt and Iran — and then make inferences from these about the ways of life of the time period and the locale of the paintings.
- Students learn how to interpret and analyze information about people’s relationships with the environment from the clothing they wear.
- Students compare their observations with the clothing and objects of today.

Learning Goals

- Make accurate observations and comparisons by looking at an object or painting.
- Make accurate inferences about aspects of a society, specifically clothing, based on observations.
- Explain how and why clothing can reflect a person’s religion, social class, daily life, or the environment in which they live.
BACKGROUND INFORMATION FOR THE TEACHER:
CREATING CONTEXT FOR THE LEARNING

Figure 53:
Three Court Officials
Frontispiece from a dispersed Sulwan al-Muta’
(The Comforts of Those Who Are Obeyed) by Ibn Zafar al-Siqilli (d. 1170)
Egypt, ca. 1325
Opaque watercolour and gold on paper
24.5 x 17.2 cm
AKM12
Three young men dressed in patterned silk tunics and soft leather boots stand together. One attendant extends his wrist, on which a cormorant, trained to catch fish, is perched. Next to him, the Royal Falconer stands with the female hawk trained to hunt game. Far left, the Master of the Hunt clutches three arrows in one hand and the royal bow in the other.

The clothing and features of the men suggest influences from geographically distant places: their rounded faces and features are Mongol and Chinese and their front-wrapped robes are typically Mongol. This style of robe, with a full calf-length skirt and tight sleeves, was developed for comfort on the horses that the Mongols rode for centuries across the great steppes of Central Asia. However, the lotus flowers embroidered on the armbands are Chinese symbols of purity. And while the garments and possibly the fabrics of the robes are typically East or Central Asian, the way they are decorated with wide, embroidered bands called tiraz is Egyptian or Syrian.
Although the manuscript from which the painting in Figure 54 was taken was created in India, the location of the tomb it depicts may be Alexandria, Egypt. The exact location of Alexander the Great’s tomb is unknown and has been the subject of much conjecture. The painting illustrates an episode from the *Khamseh* of Nezami, a collection of long poems written in the 12th century. One of the poems, called “Alexander’s Mirror,” recounts the story of Alexander, known as Esfandiyar in Persian, a Macedonian king who conquered parts of Iran and Central Asia in the 4th century BCE. Three courtiers regard the tomb; while they lack the moon faces of AKM12, their costumes are variations on the same style of dress.

Figure 54:  
The Tomb of Alexander the Great  
Folio from a dispersed *Khamseh* (Quintet) of Amir Khosrow Dihlavi (d. 1325)  
Delhi, India, ca. 1450  
Opaque watercolour and ink on paper  
34.1 x 25.2 cm  
AKM15
In Figure 55, a painting of an episode from the Persian epic poem the *Shah-Nameh*, King Sarv of Yemen stands between his three daughters and the three sons of Faridun, who have come to win their hands in marriage. According to the story, the princes were required to guess the order of the princesses’ ages. The princesses are splendidly dressed in long robes, with gold crowns and dots of henna on their hands, while the princes’ garb is similar to the costumes in Figures 53 and 54. The middle prince has a square embroidered rank badge on the front of his robe. Rank badges were used in Imperial China to identify the status of court personages.
In Figure 56, an illustration from a *Shah-Nameh* episode, Prince Gushtasp, wearing a turban and leather apron, works incognito in Byzantium as a smith. Byzantium, a city founded by Greeks in 657 BCE, was strategically located at the point in modern-day Turkey where the Mediterranean Sea runs into the Black Sea, and various warring groups fought one another for control of it. As Constantinople, it was the centre of the Byzantine Empire from 330 to 1453 CE, when it was conquered by the Ottoman Turks and renamed Istanbul. Gushtasp is engaged in a heroic feat: the scene depicts the moment before he brings down his hammer to strike a piece of metal on an anvil, shattering it and the anvil with a mighty blow. Although the figures are performing humble tasks, they themselves are obviously prosperous, as indicated by the gold embroidery on their robes.
There is more variation in the men’s clothing in Figure 56 than in Figures 53, 54, and 55. While some robes cross in front, the robes on the people in blue and in purple are front-opening kaftans. All of the robes are long, reaching to the ankle, and some men wear little black shoes that are ill-suited to horse riding.
Figure 58:
Robe
Central Asia, 11th–12th centuries
Brocaded silk
Length 142 cm, width 197 cm
AKM816
ONTARIO MINISTRY CURRICULUM CONNECTIONS, GRADE 4

SOCIAL STUDIES OVERALL EXPECTATIONS

• Compare key aspects of life in a few early societies (3000 BCE–1500 CE), each from a different region and era and representing a different culture, and describe some key similarities and differences between these early societies and present-day Canadian society.
• Use the social studies inquiry process to investigate ways of life and relationships with the environment in two or more early societies (3000 BCE–1500 CE), with an emphasis on aspects of the interrelationship between the environment and life in those societies.

SOCIAL STUDIES SPECIFIC EXPECTATIONS

• Gather and organize information on ways of life and relationships with the environment in early societies, using a variety of primary and secondary sources in both print and electronic formats (e.g. thematic and physical maps showing rivers, vegetation, volcanoes, soil types; images depicting the daily life of different social classes; religious/spiritual stories that provide evidence of society’s view of the environment; agricultural artifacts).
• Interpret and analyze information relevant to their investigations, using a variety of tools (e.g. use a graphic organizer to help them determine the relationship between soil type, availability of water, and agricultural activity; analyze the content of paintings on the Internet or at a local gallery for information on a society’s religious practices; analyze artifacts found in a museum or on a website for information on a society’s daily life and relationship with the environment).

MATERIALS/RESOURCES

• Clothing Inquiry Template (included).
• Images of the paintings in this lesson plan: AKM12, AKM15, AKM19, AKM48.
• Images of robes AKM677 and AKM816.
• Drawings of a crossover robe and a crossover robe pattern (included).
• Additional images of paintings in the Curriculum Resource Guide.
THE CREATIVE PROCESS

CHALLENGING/INSPIRING

- Teacher asks students to brainstorm reasons why people wear clothes. Answers such as warmth/comfort (related to the environment, fashion, special occasions, religious or cultural reasons, status) should be elicited from students.

IMAGINING/GENERATING

- With a partner, discuss elements of fashion that help us to categorize clothing. Then, as a large group, record some of these characteristics.

PLANNING/FOCUSING

- Teacher divides students into small groups and provides each group with a couple of pictures of clothing worn in either medieval Iran or Egypt, or potentially both.
- As students look at images, ask them to make inferences and use the Clothing Inquiry Template to classify the clothing as primarily for comfort, status, fashion, or religious purposes. Students are to support their answer with inferred evidence from the image and to explain their thought process in making the inferences. Ask the students to refer to some of the characteristics obtained from the Challenging/Inspiring phase. Students can also consider how certain they are about their hypotheses.
- As a large group, discuss the elements of good observations and inferences, and what needs to be included in the responses.
EXPLORING/EXPERIMENTING

- As students are observing the images of clothing, they should be making observations regarding the style, richness, potential comfort, everyday, or ceremonial nature of the clothing. They can refer to the descriptions of the paintings as research and also look at the sources in Section 5 of the Guide. Questions to consider: Why is there a lack of ordinary people and of women in the paintings? Why are these groups less represented in the art of the time?
- Students can also look at the crossover robe drawing and pattern to understand how the robes are cut from cloth in a series of rectangles and triangles and put together to make a “one-size-fits-all” garment. They can compare this kind of “square-cut” garment to their own clothing; if it is modern Western style, students’ clothing will feature pieces of cloth that are closely shaped and formed to the body.

Figure 59: Basic Crossover Coat.
PRODUCING PRELIMINARY WORK

- Based on their observations for each image of clothing, using the Clothing Inquiry Template, students should work to determine what the primary purpose of the clothing is and provide inferred evidence from their observations.

Figure 60:
Basic crossover coat pieces showing the rectangle AB that is the front and back with a neck opening F; the triangle D that attaches to the centre front to form the crossover; sleeves C; and pieces E at the armpits to give more freedom of movement. E is also shown as a square to indicate that it is folded on the diagonal along the dotted line to attach to the sleeve and body.
REVISING AND REFINING

- Regardless of whether students are looking at clothing images from the same society or different societies, they should carousel to other groups looking at different images and should examine the evidence presented and compare and contrast their findings.

PRESENTING/PERFORMING/SHARING

- Teacher debriefs the activity by asking how the clothing images the students looked at from the society in question are different from the clothing the students wear in terms of style and purpose.
- As a large group, record some of the key vocabulary relating to this activity on chart paper to be placed on the Social Studies bulletin board.

REFLECTING/EVALUATING

Students are asked to share observations of how the environment influences the differences in the clothes we wear in Canada and the clothes that are worn in Iran or Egypt, or complete an exit card recording their ideas.

SUCCESS CRITERIA AND ACHIEVEMENT CHART CATEGORIES

<table>
<thead>
<tr>
<th>Achievement Chart Categories</th>
<th>Success criteria for assessment as learning (not for marks) to help students become more observant in making inferences from works of art</th>
<th>Rating Scale/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and Understanding</td>
<td>Teacher should assess how many accurate observations students can make by looking at an object or painting.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Thinking</td>
<td>Teacher should assess the extent that students can make accurate inferences about aspects of a society, specifically clothing, based on their observations.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Communication</td>
<td>Teacher should assess the extent that students can explain how and why clothing can reflect a person’s religion, social class, daily life, or the environment in which they live.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Application</td>
<td>Teacher should assess the extent that students can accurately compare the clothing styles and purposes from one society to another and to Canadian society, based on environmental differences.</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
CLOTHING AND OBJECT INQUIRY TEMPLATE

Object Number ________________.

What do you observe?

Where and who would wear it?

After reviewing your observations, make inferences as to whether the clothing pictured is worn primarily for environmental, practical, religious, or status (social class) purposes. Rank these below with inferred evidence-based reasons.

<table>
<thead>
<tr>
<th>Ranked Purpose of Clothing/Object Observed</th>
<th>Evidence Inferred from Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
LESSON INTENT

- Students examine a 16th-century painting from the *Akhlaq-e Nasiri* (Ethics of Nasir) and use a cut-out frame in the proportions of the golden ratio to select a detail of the painting to work with. The framed detail inspires the students’ creation of a drawing in pencil crayon. Students also develop a description of their drawings as illustrations of episodes in imaginative stories of their own devising.

LEARNING GOALS

- Make accurate observations about the elements and principles of design in a painting.
- Identify details in a painting that contribute to an overall impression of both unity and harmony, and movement.
- Explain how a painting can convey information about how people lived, held certain beliefs, and formed communities based on those beliefs in the time of its making.
- Demonstrate an understanding of the capacity of a painting to tell a story.
- Demonstrate an understanding that there can be mathematical principles of symmetry and proportion operating in a figurative painting and identify those principles.
BACKGROUND FOR THE TEACHER: CREATING CONTEXT FOR THE LEARNING

The colourful painting in Figure 61 comes from a treatise on ethics, social justice, and politics by a medieval Iranian philosopher, Nasir al-Din Tusi (d. 1274), who lived in the eastern Persianate world and studied among the great scholars and mystics of the period. More than 300 years later, the Akhlaq-e Nasiri was a favourite book of Akbar the Great, the third Moghul emperor of India. It was in one of Akbar’s courtly workshops that the manuscript containing this painting was copied and illustrated. The way the artists animated its philosophical ideas with stories makes this manuscript very remarkable.
In the painting in Figure 61, the action takes place in a rural environment as a young Moghul prince strives to show his peers that he can control a powerful horse with skill, at the same time managing his lance, a crop, and a golden sword. At top right three older gentlemen on horseback represent the ministers of state, one of the noble professions. They converse with one another while watching closely the progress of the young prince. Some younger peers at lower right observe the skill of the prince, since they will soon need to show off their own abilities.

ONTARIO MINISTRY CURRICULUM CONNECTIONS, GRADES 7 AND 8

VISUAL ART

- Recognize and learn to work effectively with the elements and principles of design, especially unity and harmony (Grade 7) and movement (Grade 8).

LANGUAGE AND LITERACY

- Learn how to read a painting for meaning; practise creative-writing techniques.

MATHEMATICS AND SCIENCE

- Recognize and learn to work effectively with the mathematical principles underlying the golden ratio (1.618).

MATERIALS

- Six poster-sized (24 x 36 inch) colour prints of the painting. These can either be commercially printed or printed on a colour copier from the DVD or the Web and tiled together with tape.
- A box of 72–100 Prismacolor pencil crayons.
- An electric pencil sharpener.
- For each student:
  - Page with a printed golden ratio frame (Figure 62).
  - Scissors.
  - Glue stick.
  - Graphite pencil.
  - Piece of 80 lb. sketch paper, 9 x 12 inches.
THE CREATIVE PROCESS

CHALLENGING/INSPIRING

- Introduce the students to the notion of visiting a museum, what a museum is, how it maintains and displays a society’s history, etc.
- Give a brief introduction to the tradition of Iranian and South Asian painting of the 15th and 16th centuries, of which the paintings in the Akhlaq-e Nasiri are excellent examples. See Section 5 in the Guide for help with this.
- Make sure the students have a grade-specific understanding of the elements — line, shape, colour, texture, space, and value (light/dark); and principles of design, including contrast, repetition, variety, emphasis, proportion, pattern, balance, and unity.
- Introduce the students to some of the great myths and stories of the world, with special emphasis on those that relate to the cultural makeup of the particular class. Suggested resources include Shahnameh: The Persian Book of Kings by Elizabeth Laird, a book that retells the famous Iranian stories for children; and “The Adventures of Hamza,” an interactive website about the fabled exploits of the uncle of the Prophet Muhammad developed by the Smithsonian Institution in Washington, D.C. Details about these are in Section 5 of the Guide.
- Introduce the students to the principle of the golden ratio as it is found in nature and as it is used as a design tool in art and architecture. For example, students could bring in magazine images of natural phenomena such as sunflowers and seashells.

IMAGINING/GENERATING

- Students examine the painting in Figure 61 closely and note differences or similarities between it and the other paintings in the Guide. The teacher can project each painting with an overhead or data projector or whiteboard, or by going to the Aga Khan Museum’s website (www.agakhanmuseum.org/collection/collection-highlights).

PLANNING/FOCUSED

- The class divides into groups of up to five; each group has a poster of The Art of Chivalry to work from, and each student has a frame.
- Each student cuts a frame out and applies it to the poster to identify a detail to work on. This stage should not be rushed. The frame can be applied horizontally, vertically, or obliquely, and the white lines should line up with the focal point of the detail. This strategy results in a golden ratio composition.
- The frames should not overlap one another, so some negotiating and collaborating may be necessary.
Figure 62: The Golden Ratio Frame.
PRODUCING PRELIMINARY WORK

- Each student cuts a detail out of the poster and glues the piece to the top of a sheet of sketch paper. Below the detail is space for (1) a colour bar with six or more squares, and (2) the student’s drawing using the colours in the colour bar. See Figure 63 for a sample page showing the placement of the various elements. Students can add or change elements, but they must reflect the golden ratio in their drawings.

Figure 63: Sample page for student activity (not to scale).
REVISING/REFINING

- After each drawing is completed, the student writes a title and a few sentences of narrative, setting the illustration in a larger story. In keeping with the *Akhlaq-e Nasiri*, the story should have a clear message about ways of life at the time of the painting.
- Note: any element in the painting can be a character in the story, whether it is an animal, a human, or even a plant.

PRESENTING/PERFORMING/SHARING

- Each group in turn presents its drawings and reads the narrative sentences, explaining the rationales — why details were picked and why the drawings illustrate the narratives.

REFLECTING/EVALUATING

In the classroom, the class can collaborate on putting together the different narratives into a coherent story. This becomes a class creative-writing exercise that involves editing and changing the different episodes so that they all work together.
SUCCESS CRITERIA AND ACHIEVEMENT CHART CATEGORIES

<table>
<thead>
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<th>Rating Scale/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and Understanding</td>
<td>How well do the students understand the elements and principles of design? Are they able to point out instances of unity and harmony and of movement in the painting, and explain how they work together?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking</td>
<td>Have the students been thoughtful in choosing their detail and creating a story for it?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>Have the students been able to communicate their impressions of the painting and of their detail?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>To what degree have students been successful in planning and creating their page composed of the detail, the colour study, their drawing, and their story?</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

NOTES


