

ShadeX Engine

ShadeX Language
reference cards

```

<matrix value> (
  "<f>" 0,1,4,9,16
  (matrix)* { "<f>" 0,1,4,9,16 }
  (rotate)* {
    angle = <f>;
    "<f>" 0..4
  }
  (translate)* { "<f>" 0..4 }
  (scale)* { "<f>" 0..4 }
  (shear)* { "<f>" 0..4 }
  (orthographic)* {
    left = <f>; right = <f>; bottom = <f>;
    top = <f>; znear = <f>; zfar = <f>;
  }
  (view)* {
    (position) { "<f>" 0..4 }
    (view) { "<f>" 0..4 }
    (up) { "<f>" 0..4 }
  }
  (perspective)* {
    angle = <f>; znear = <f>; zfar = <f>;
    width = <f>; height = <f>;
  }
)

```

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Uniforms

```
(float) {  
    id = "<s>" ;  
    value = <f>;  
}
```

```
(vector) {  
    id = "<s>" ;  
    (value) { "<f>" 0..4 }  
}
```

```
(matrix) {  
    id = "<s>" ;  
    (value) { <matrix value> }  
}
```

```
(double) {  
    id = "<s>" ;  
    value = <f>;  
}
```

```
(dvector) {  
    id = "<s>" ;  
    (value) { "<f>" 0..4 }  
}
```

```
(dmatrix) {  
    id = "<s>" ;  
    (value) { <matrix value> }  
}
```

```
(texture) {  
    id = "<s>" ;  
    path = "<s>";  
    width = <i>;  
    height = <i>;  
    format = ("byte" (default with path) | "float16"  
             | "float");  
}
```

```
(volume) {  
    id = "<s>" ;  
    (paths) { ("<s>")* }  
    width = <i>; height = <i>; depth = <i>;  
    format = ("byte" (default with path) | "float16"  
             | "float");  
}
```

```
(shader) {  
  id = "<s>" ;  
  vertex = "<s>" ;  
  tessellation_control = "<s>" ;  
  tessellation_evaluation = "<s>" ;  
  geometry = "<s>" ;  
  fragment = "<s>" ;  
  (vertex) {"<s>" }  
  (tessellation_control) {"<s>" }  
  (tessellation_evaluation) {"<s>" }  
  (geometry) {"<s>" }  
  (fragment) {"<s>" }  
  (transformfeedback) {"("<s>")* }  
}
```

```
(rendertarget) {  
  id = "<s>" ;  
  width = <i>;  
  height = <i>;  
  renderToDisplay = ("true" | "false");  
}
```

```
(mesh) {  
  id = "<s>" ;  
  path = "<s>" ;  
  faceSize = <i>=3>; maxVertexCount = <i>;  
  discardStandardBuffers = ("true" | "false");  
  (attribute)* {  
    name = "<s>"; outputName = "<s>";  
    attributeSize = <i>;  
    (data) {"("<f>")* }  
  }  
  (path)* {  
    discardStandardBuffers = ("true"  
    | "false");  
    "<s>"  
  }  
  (uniformset)* {  
    id = <i>;  
    (floats) { ("<s>" | <s> = "<s>";)* }  
    (vectors) { ("<s>" | <s> = "<s>";)* }  
    (matrices) { ("<s>" | <s> = "<s>";)* }  
  }  
}
```

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Resources

```
( skeleton ) {  
    id = "<s>" ;  
    path = "<s>" ; mesh = "<s>" ;  
    ( skeletonMatrix ) { <matrix value> }  
    (<bone>)*  
    ( transformationset )* {  
        id=<i>;  
        ( transform )* {  
            id="<s>" ;  
            input = "<s>" ;  
            output = "<s>" ;  
        }  
    }  
}  
  
<bone> (  
    ( bone ) {  
        id = "<s>" ;  
        ( parentTransform ) { <matrix value> }  
        (<bone>)*  
    } )
```

```
( audiobuffer ) {  
    id = "<s>" ;  
    path = "<s>" ;  
}
```

```
(object) {
  id = "<s>" ;
  visible = ("true"|"false");
  shader = "<s>"; mesh = "<s>";
  (textures)* { ("<s>"|<s> = "<s>");* }
  (volumes)* { ("<s>"|<s> = "<s>");* }
  (floats)* { ("<s>"|<s> = "<s>");* }
  (doubles)* { ("<s>"|<s> = "<s>");* }
  (vectors)* { ("<s>"|<s> = "<s>");* }
  (dvectors)* { ("<s>"|<s> = "<s>");* }
  (matrices)* { ("<s>"|<s> = "<s>");* }
  (dmatrices)* { ("<s>"|<s> = "<s>");* }
  (uniformset)* {
    id=<i>;
    (textures)* { ("<s>"|<s> = "<s>");* }
    (volumes)* { ("<s>"|<s> = "<s>");* }
    (floats)* { ("<s>"|<s> = "<s>");* }
    (doubles)* { ("<s>"|<s> = "<s>");* }
    (vectors)* { ("<s>"|<s> = "<s>");* }
    (dvectors)* { ("<s>"|<s> = "<s>");* }
    (matrices)* { ("<s>"|<s> = "<s>");* }
    (dmatrices)* { ("<s>"|<s> = "<s>");* }
  }
  (passes) { ("<s>")* }
  (instancebuffers) { ("<s>")* }
}
```

```
(pass) {
  id = "<s>" ;
  backgroundQuad = ("true"|"false");
  visible = ("true"|"false");
  wireframe = ("true"|"false");
  shader = "<s>";
  (objects)* { ("<s>")* }
  (textures)* { ("<s>"|<s> = "<s>");* }
  (volumes)* { ("<s>"|<s> = "<s>");* }
  (floats)* { ("<s>"|<s> = "<s>");* }
  (doubles)* { ("<s>"|<s> = "<s>");* }
  (vectors)* { ("<s>"|<s> = "<s>");* }
  (dvectors)* { ("<s>"|<s> = "<s>");* }
  (matrices)* { ("<s>"|<s> = "<s>");* }
  (dmatrices)* { ("<s>"|<s> = "<s>");* }
  (output) {
    rendertarget = "<s>";
    <outputsettings>
    ("<s>" | <s> = "<s>");*
  }
  (volumeoutput) {
    rendertarget = "<s>";
    <outputsettings>
    ("<s>" | <s> = "<s>");*
    (layercoordinate){("<s>" | <s> = "<s>");}
    (startlayer) { "<s>" value = <i>; }
    (endlayer) { "<s>" value = <i>; }
  }
  geometryoutput = "<s>";
}
```

```
( effect ) {
  id = "<s>" ;
  visible = ( "true" | "false" );
  ( passes ) * { ( "<s>" | ( <s> ) { "<s>" * } ) * }
  ( meshes ) * {
    "<s>" *
    ( <s> ) * {
      "readUniforms" *
      "writeUniforms" *
    }
  }
  ( skeletons ) * { ( "<s>" | ( <s> ) { "<s>" * } ) * }
}
```

```
<outputsettings> (
  clearDepthBuffer = ( "true" | "false" );
  clearColorBuffer = ( "true" | "false" );
  fragmentBlendFactor = ( "zero" | "one"
    | "fragmentcolor" | "framebuffercolor"
    | "fragmentalpha" | "framebufferalpha"
    | "one_minus_fragmentcolor"
    | "one_minus_framebuffercolor"
    | "one_minus_fragmentalpha"
    | "one_minus_framebufferalpha" );
  targetBlendFactor = ( "zero" | "one"
    | "fragmentcolor" | "framebuffercolor"
    | "fragmentalpha" | "framebufferalpha"
    | "one_minus_fragmentcolor"
    | "one_minus_framebuffercolor"
    | "one_minus_fragmentalpha"
    | "one_minus_framebufferalpha" );
  depthTest = ( "accept_never" | "accept_always"
    | "accept_less" | "accept_less_equal"
    | "accept_greater"
    | "accept_greater_equal"
    | "accept_equal" | "accept_not_equal" );
  writeDepthBuffer = ( "true" | "false" );
)
```

```
(audioobject) {  
  id = "<s>" ;  
  buffer = "<s>" ;  
  position = "<s>" ;  
  referenceRadius = "<s>" ;  
  maxRadius = "<s>" ;  
  distanceExponent = "<s>" ;  
  velocity = "<s>" ;  
  volume = "<s>" ;  
  pitch = "<s>" ;  
  looping = ( "true" | false ) ;  
  (passes) {  
    ("<s>")*  
  }  
}
```

```
(audiolistener) {  
  id = "<s>" ;  
  position = "<s>" ;  
  view = "<s>" ;  
  up = "<s>" ;  
  velocity = "<s>" ;  
  volume = "<s>" ;  
  (passes) {  
    ("<s>")*  
  }  
}
```

```
(audiopass) {  
  id = "<s>" ;  
  listener = "<s>" ;  
  (objects) {  
    ("<s>")*  
  }  
}
```