Index

Note to reader: **Bolded** page numbers refer to main discussions of a topic. **Italicized** page numbers refer to illustrations.

# A

1.85:1 aspect ratio, widescreen, 10
2.5D Brushes section, Tool palette
  brush strokes, 55–57, 55–57 defined, 54, 54
2D paint programs, 2
2K, meanings of, 10
3D layers
  adjusting strength of, 456–457, 457
  baking, 457–460, 457–461
document layers vs., 455
Layers subpalette and, 454, 454–455
overview of, 454
Record mode, 455–456
3D mesh (or 3D tool)
  controlling display on canvas, 38–39, 38–39
defined, 14
in Edit mode, 32
number of points on, 36, 36
splitting into subtools, 41
symmetry settings in Transform palette when editing, 58, 58
3D Meshes section, Tool palette, 54, 54
3D models
  anatomy of polygons, 12–14
  polygon resolution and, 10–11, 11
3D printers, 3, 3
3D space, 11–13, 12
4:3 aspect ratio, 10
5 hotkey, 272–273, 273
16:9 aspect ratio, widescreen, 10
A hotkey. see Preview mode
AAHalf button
  creating custom brush icon, 291
defined, 37, 38
absolute position, vertex in 3D space, 11
Actual button, 37, 38
Adaptive Skin subpalette, 156, 156
adaptive skinning
  classic, 147–150, 147–150
  classic vs., 159–160, 159–160
  converting retopology cage to, 245, 245
defined, 142
understanding, 145–146, 145–146
for ZSphere dragon body, 156–158, 156–158
Add To SpotLight button, Texture palette, 355, 355, 373, 373
Adobe Flash, vector graphics with, 8
Adobe Illustrator, vector graphics with, 8
algorithms, brush, 72–73
aliasing, 4
Align To Object button, Draw palette, 46, 46
Alpha Adjust edit curve, 302, 302–303
alpha textures
  adding to Curve stroke, 321, 321
  applying in ShadowBox, 207–208, 207–208
  applying with LightCap, 403, 403
  brush twist, 307, 307
  creating in Photoshop, 293–295, 293–295
  creating in ZBrush, 295–299, 296–299
  editing, 300–303, 301–302
  overview of, 292–293, 293
  polypainting with, 330, 330
  Roll, 299–300, 299–300
  Spin, 305–306
  Tilt, 304, 305–306
Alt key
  deleting ZSpheres, 243
  moving subtools, 137, 138
  reversing brush action, 83, 114
ambient light
  creating in LightCap, 400, 400
  in glow light type, 397–398, 398
ambient occlusion
  adding to BPR renders, 421–422, 421–422, 430, 430
  masking, 349–350, 349–350
  render passes, 435, 435–436
texture, 468
Ambient slider, sun light type, 394
animation
of 3D layers on Timeline, 471–474, 472–473
recording and exporting movies, 474–475
of subtools as objects on Timeline, 475–477, 475–477
ZBrush for, 2–3, 2–3
anti-aliasing
controlling for BPR with SPix slider, 37, 37, 420–421, 421
smoothing images with, 4, 4
AO render pass, 436
Aperture, LightCap interface, 400–401, 401
Append button, subtools
append ZSphere to dragon head model, 146, 150
converting retopology cage to adaptive mesh, 245, 245
CurveTube brush, 269, 270
MatchMaker brush, 208, 208
sculpting hair mesh, 137, 137
skinning ZSphere dragon body, 156, 157
tips, 135
Apply To Mesh button
adjusting layer strength, 457
applying noise to mesh, 445
use image to make noise, 448
armature
applying ZSketching to existing ZSphere. see ZSketch
binding and posing ZSketch, 173–176, 173–176
binding mesh with ZSpheres, 251, 251–252
creating with ZSpheres. see ZSpheres
premade as mannequins. see mannequins
Armature brush, 163, 171, 173
arrow buttons, subtools, 135
Arrow3D tool, 100
artifacts
defined, 7, 7
limitations as alphas, 295
artist, being digital, 16
As Line setting, Curve mode, 322
aspect ratio, and image resolution, 10
Auto Mask Mesh Insert button, 104
Auto Masking subpalette, 131, 348
Back icon, SpotLight, 361
back lighting, 392, 392
background color
changing canvas, 47, 47
setting document, 434, 434
background image, in LightCap lighting, 403, 403–406, 404–406
Background subpalette, Light palette, 404–406
Backtrack settings, 317
Bake All button, 3D layers, 460
baking 3D layers, 457–460, 457–461
base coat, polypainting, 337–339, 337–339
BasicMaterial2 shader
adding eyes with InsertSphere brush, 93, 94
creating custom brush icon, 291
creating noise, 440
creating specular pass, 436
creating Standard lighting. see Lighting
creating ZSketch, 163–164
starting sculpture using, 66
Bend button, 274
Bend setting, Curve mode, 322
Best mode, rendering
defined, 50, 51
glow light type, 397–398, 398
overview of, 389–390, 390
point light type, 395–396, 396
shadows, 399, 399
spot light type, 397
using BPR and, 396
Best Preview Render. see BPR (Best Preview Render) mode
Bind button, ZSketch, 174–176
Bind Mesh button, ZSpheres, 252, 255
binding
mesh with ZSpheres, 249–253, 249–253
with ZSketch, 173–176, 173–176
Blend Modes menu, LightCap, 403
blend shapes, Maya. see morph targets
blending
colors in polypainting, 331, 331
images with fade in SpotLight, 367–368, 367–368
Blur brush base, 279, 279
Blur slider, and cavity masking, 348
BlurMask, 89
blurring strokes, polypainting, 332, 332
body
adding ZSphere legs and tail, 153–156, 153–156
creating using ZSpheres, 146, 146, 150–151, 150–152
merging head and, 160–161
skinning ZSphere dragon, 156–158, 156–158
books, resources, 18
Boolean operations on surface, Dynamesh, 234
Border slider, unified meshes, 170
BPR (Best Preview Render) mode
ambient occlusion, 421–422, 421–422
blurring border between materials, 416–417, 417
creating specular pass, 436–437, 437
defined, 51, 52
LightCap interface, 401
LightCap interface and, 401
Overview of, 389–390, 390
render filters, 430–433, 430–433
render passes, 435, 435–436
rendering hair, 428–429, 428–430
rendering movies, 474
rendering with both Best mode and, 396
in Shader Mixer, 420
shadows, 399, 399
subpixel anti-aliasing quality, 420–421, 421
Subsurface Scattering, 425–427, 426–427
subtool transparency, 422–423, 422–424
sun light type, 395, 395
Wax Preview, 424–425
BPR Transparent subpalette, 423
BRadius button, clip brush, 219–220, 219–220
brush depth, 313–315, 313–315
brush effects
  Elasticity settings, 309–310, 309–310
  Noise option, 310–311, 310–311
  Trails feature, 307–308, 308
brush fly-out library
  accessing from Brush palette, 45
  defined, 27
  searching, 66
Brush Modifier slider
  Tablet Pressure settings, 288–290, 288–290
  using, 287, 287
Brush palette
  Brush Modifier slider, 287, 287
  overview of, 45, 45
  saving custom brush preset, 285–286, 286
  Smooth brush, 70
  Tablet Pressure, 288–290, 288–290
Brush Radius, clip brush options, 218–220, 218–220
brush texture, polypainting with, 334, 334
brushes
  alpha textures. see alpha textures
  applying cavity masking to, 348
  controls for current, 31, 31
  customizing for polypainting, 332, 332
  effects, 307–311
  hard surface detail. see hard surface detail brushes
  overview of, 277
  turning on Curve mode for, 269, 269
brushes, base types
  Blur, 279, 279
  Clay, 279, 279
  Displace, 281, 281
  Elastic, 280, 280
  Hide/Show, 280, 280
  InsertMeshDot, 282, 282
  Mask, 280, 280
  Move, 279, 279
  overview of, 278, 278
  Pinch, 281, 281
  Polish, 279, 279
  Project, 280, 280
  Pump, 282, 282
  SingleLayer, 281, 281
  SnakeHook, 281, 281
  Standard, 278, 278
  Trim, 282, 282
  brushing, designing
    applying LazyMouse, 283–285, 283–285
    custom brush icon, 290–291, 290–291
    overview of, 282–283
    resetting to initial states, 304
    saving custom brush preset, 285–286, 286
Tablet Pressure settings, 288–290, 288–290
  using Brush Modifier slider, 287, 287
  using detailBrush, 292, 292
Bulge brush, 164, 173

C
  C hotkey. see color picker
calligraphy effect, Trails feature, 307–308, 308
camera view, 470–471, 470–471
canvas
  background color of, 47, 47
  Document palette setting size and background of, 46
  navigating, 39–42, 40–42
  navigating with right shelf controls, 36–39, 36–39
  overview of, 20–22, 21
  rendering directly on, 50–51
  selecting color from objects on, 31
  shelves. see shelves
car body
  clipping at angle with ClipCurve, 225–230, 226–230
creating. see ShadowBox, creating model
  creating interior space, 232–233, 233
creating interior with clip brushes, 232–234, 233
deforming multiple subtools, 254–257, 254–257
deforming windows with clip brushes, 230–231, 230–231
defining using clip brushes, 223–225, 224–225
defining windows with clip brushes, 230–231, 230–231
  replacing topology with Dynamesh, 231–232, 232
sculpting references in SpotLight, 372–374, 373–374
cavity masking, 347–348, 347–348
  Cavity Profile edit curve, 348
Center button
  MaskCircle brush, 200, 200
  Radial Symmetry, 204
Chalk material, 421–422, 421–422
circles, and color depth, 5–6, 5–6
Circle button, masking selections, 118–119
Circle stroke type
  with Mask Pen brush, 92
  masking selections, 117–118, 118
Circle3D tool, 100
classic adaptive skinning
  adaptive skinning vs., 159–160, 159–160
  overview of, 147–150, 147–150
Clay brush, 299–300, 299–300
Clay brush base
  defined, 279, 279
  defining forms with, 70, 71
  editing design in Dynamesh, 81
tips, 72, 72
clay, digital, 62, 62–63
Clay Tubes brush, 140
ClayBuildup brush, 86–87, 88, 140
ClayPolish, and Dynamesh, 231–232, 232
Clip Brush Modifiers subpalette,
  218, 219
clip brushes
  basics, 211–213, 212–213
  Brush Radius and PolyGroup Clip Brush, 218–220, 218–220
  ClipCircle brush, 213–215, 214–215
  ClipCurve brush. see ClipCurve brush
  clipping at angle, 225–230, 226–229
  creating interior space in model, 232–234, 233
  creating tires, 215–217, 215–218
  Dynamesh and ClayPolish, 231–232, 232
  overview of, 211
refining car body, 223–225, 224–225
refining windows, 230–231, 230–231
ClipCircle brush, 213–215, 214–215
ClipCircleCenter brush, 216–217, 217
ClipCurve brush
  clipping at angle, 225–230, 226–230
curve snapping, 221
  refining car body, 223–225, 224–225
  refining windows, 231, 231
  using, 220–223, 220–223
  clipping at angle, 225–230, 226–229
ClipRect brush, 212–213, 212–213
Color layer, polypaint layers, 462
Color palette,
  45
  45
  Colorize button, Polypaint subpalette
  activating polypaint, 327–329, 327–329
  ambient occlusion mask, 350
  polypainting tips, 337
comma (,) hotkey, show/hide
LightBox, 22
compression, image, 7, 7–8
Cone3D brush, 95–98, 95–98
Cont Ori button, Picker palette, 318, 319
contact points, 475–477, 475–477
Contrast icon, SpotLight, 362
copying and pasting, material shaders, 407–408, 407–408
CopyMat button, shaders, 407
Corel Painter, 188, 189
Create Environment button,
  LightCap, 403
Create From NoiseMaker, Alpha palette, 303, 311
CreateDiff button, morph targets, 452
Ctrl key
  activating Mask Pen brush, 84–85, 85
  activating masking brushes, 83, 114
  posing mannequin, 259–260, 260
Ctrl+A (MaskAll), 88, 119, 125, 125
Ctrl+Alt (erase part of mask), 89
Ctrl+Alt+tap (SharpenMask), 89
Ctrl+D. see subdivision levels
Ctrl+H (ViewMask), 88

Ctrl+I (Inverse)
cavity masking in polypainting, 347
defined, 88
masking selections, 119–120, 120
working with polygroups, 123–125

Ctrl+Shift
clip brushes mapped to, 211
creating selection area, 115, 115
selecting SliceCurve brush, 128
selection brushes mapped to, 114, 116–117

Ctrl+Shift+A (Clear), 88
Ctrl+Shift+click (reveal surface), 119–120, 120
Ctrl+Shift+S (Shrink button), 122
Ctrl+Shift+X (Grow button), 122
Ctrl+Shift+Z (redo hotkeys), 47
Ctrl+Z (undo), 47, 85

Cube3D tool, 98
curve brushes
Curve mode and, 266–269, 267–269
CurveSurface brush, 273–275, 273–275
CurveTube brush, 269–273, 270–273
overview of, 266

Curve Edit Focal Shift setting, Curve mode, 322
Curve Edit Radius setting, Curve mode, 322
Curve Falloff, Curve mode, 322
Curve Falloff graph, editing, 271–272, 272

Curve mode
curve brushes using, 266–269, 267–269
for CurveTube brush, 269–273, 270–273
with polypaint, 374–376, 375–376
settings in, 319–322, 320–321
curve snapping, 221
Curve Step, Curve mode, 322
CurveEdit Radius, CurveSurface brush, 274, 274
CurveSurface brush, 273–275, 273–275
CurveTube brush, 269–273, 270–273
customizing brushes, 332
customizing brushes, polypainting, 332
Cylinder3D tool, 98

DamStandard brush
creating fine lines, 87, 88
creating wrinkles, 459–460, 460
sculpting hair, 140

DefaultSphere.ZPR project, 64–68

DefaultZScript button, 58
departions, bending teeth, 101–102, 101–102
Deparations subpalette
clip brush, 218–219, 219
creating alpha, 296
creating multicharacter scenes, 261
detailBrush, 292
MatchMaker brush, 209
detoing mesh
binding mesh, 249–253, 249–253
deforming multiple subtools, 254–257, 254–257
overview of, 249
posing characters, 257–258, 257–258
deleting
current curve in Curve mode, 322
lights, 401
morph targets, 453
recorded video in Movie palette, 469
in SpotLight, 361
subtool, 135

DemonRetopo subtool, 245–246, 246
deoProjects folder, LightBox, 23, 23
depth
brush, 313–315, 313–315
masking, 316, 316
Depth render pass, 435–436
Depth subpalette, 313–316, 313–316, 318
design
creating in Curve mode, 376–377, 377
design of materials. see materials, designing
detailBrush
creating custom icon, 290–291, 290–291
saving custom preset as, 286, 286
Tablet Pressure settings, 288–290, 288–290
using, 291–292, 291–292
using Brush Modifier slider, 287, 287

Diffuse mode, LightCap, 402, 402, 410–411
digital art basics
3D space, 11–14, 12–14
anatomy of pixels, 3–4
being a digital artist, 16
channels and color depth, 5–6, 5–6
image formats, 6–8, 7
introduction to ZBrush, 2–3, 2–3
pixols vs. pixels, 15, 15
resolution, 8–11
resources, 16–18, 17
smoothing images with anti-aliasing, 4, 4
vector images, 8
digital clay, 62, 62–63, 72
digital illustrations, ZBrush, 3
digital images
anatomy of pixels, 3–4, 4
channels and color depth, 5–6, 5–6
formats, 6–8
smoothing with anti-aliasing, 4, 4
digital sculpting, see also insert brushes; masking
brush algorithms, 72–73
defining forms with Standard and Clay brushes, 70–73, 71–73
digital clay and, 62–63
Dynamesh and, 77–82, 78–82
overview of, 61
practicing ZBrush for, 111
with sculpting brushes, 63–65, 64–65, 67–68
Smooth brush and, 68–70, 69–70
subdivision levels in, 73–75, 74–75
topology, 76, 76
Displace brush base, 281
Display subpalette, 115–116, 116, 136–140
Doc button, Movie palette, 469
document layers, 455
Document palette
creating custom brush icon, 290, 290–291
overview of, 46, 46
setting document size and background, 434, 434
documents
exporting rendered image and, 390
formats, 6
resolution, 9
setting resolution, 434, 434
ZBrush, 21
dots per inch (dpi), document resolution, 9
Double option, Display subpalette
creating polygroup, 121
masking selections, 118
viewing both sides, 116, 116
downloading materials, 409, 409
dpi (dots per inch), document resolution, 9
Dracopedia (O’Connor), 64, 351
DragDot stroke type, Curve mode
creating design, 376–377, 377
Curve stroke type, 320–321, 321
overview of, 267, 267
DragRect stroke type
editing alpha texture, 301–303, 301–303
polypainting mottling pass, 342–343
polypainting with brush texture, 334, 334
Draw button
2.5D brush strokes, 57
shelf at top, 31, 31
Transform palette, 58
ZSpheres, 142–144, 143–144
Draw mode
adding toes in ZSphere, 155
binding mesh with ZSpheres, 252, 253
creating ZSketch, 167
editing mannequin, 263, 263–264
erasing ZSpheres, 171
Draw palette, 46, 46
Draw Size slider
applying LazyMouse to Standard brush, 283
clip brush options, 219
with CurveSurface brush, 274
with CurveTube brush, 270–272, 272
defined, 36
depth masking, 316
planar brush, 312
polypainting mottling pass, 344
retopology with ZSpheres, 238
Duplicate button, subtools, 135, 261, 261
Dynamesh
adding eyes with InsertSphere brush, 93–94
ClayPolish and, 231–232, 232
converting mannequin into mesh, 265–266, 266
creating Boolean operations on surface, 234
creating interior space in model, 232–233, 233
creating model, 77–79, 78–79
creating polygroups with SliceCurve brush, 128–130, 128–130
creating wings with CurveSurface brush, 275, 275
editing design, 80–81, 80–81
editing mask, 87, 87–88
masking by polygroups, 131, 131–132
merging head and body, 161
overview of, 77
refining surface with Polish brushes, 82, 82
replacing topology with unified skin, 231–232, 232
sculpting hair, 139–140, 139–140
DynameshDemon subtool, 246, 246–247

E hotkey. see Scale button
edge, flattening with planar brush, 313
edgeflow, retopologizing character for, 238
edges, flattening with planar brush, 312–313
Edit button, Transform palette, 58
edit curve, Surface Noise interface, 441, 442
Edit mode
creating alpha in ZBrush, 298–299, 299
creating ZSketch for. see ZSketch
overview of, 32–35, 32–35
for Radial Symmetry in ShadowBox, 204–206, 204–206
understanding, 62–63
Edit mode, SpotLight
blending images using fade, 367–368, 367–368
identifying, 355
projecting images, 364
sculpting references, 372–374, 373
symmetrical projection, 370–372, 371–372
Edit palette, 47
Edit Topology button, ZSpheres, 238, 244
Edit ZSketch button, 179
editing
design in Dynamesh, 80–81, 80–81
images with SpotLight, see Edit mode, SpotLight
mannequins, 262–265, 262–265
masks, 86–88, 87–88
MatCap material, 412–413, 413
editing alpha textures
overview of, 300–303, 301–302
Spin, 305–306, 305–306
Tilt, 304, 304
Twist, 307, 307
EditSketch button, ZSketch, 163, 163
Elastic brush
overview of, 280, 280
Tilt Brush setting, 304, 304
Elasticity settings, brush effects, 309–310, 309–310
errors, ZSphere, 151, 151
Exp slider, Shader Mixer, 419
exporting
custom brush icon, 291
movies, 469
rendered image, 390
texture, 467–468, 467–468

Exposure, LightCap, 403, 411
eyeball icon, Subtool palette, 134
eyes
adding to creature or character, 93–94, 93–94
creating mask around, 117–120, 118–120
creating polygroups for eyelids, 124–125, 124–125
using Curve mode with polypaint for, 374–376, 375–376

faces
adding details in ZSketch, 170–173, 171–173
arranging into polygroups, 121–123, 122–123
Fade icon, SpotLight, 360, 367–368, 367–368
Falloff setting, LightCap, 400–401, 400, 410–411
Fantasy Art Workshop and Forging Dragons (Howe), 64
Fast Preview mode, FiberMesh, 383, 383
Fast render quality setting, 50, 51, 389–390, 390
FiberMesh
advanced capabilities, 388
creating hair mesh, 382–383, 382–383
grooming hair, 388
lengthening hair, 386–388, 386–388
overview of, 380
preview settings, 380–382, 380–382
rendering hair using BPR, 428–429, 428–430
rendering tutorials for, 430
styling, 383–386, 384–385
Wax Preview, 424–425
Fibers subtool, FiberMesh, 385
File palette, 47–48, 48, 65
fill lighting effect, 393–394, 394
FillObject button, polypainting
cavity masking, 347–348, 348
filling model with current material, 415, 415
filling object with color, 333, 333
filling only visible, unmasked parts of surface, 337
filling with texture, 334
filters
BPR render, 430–433, 430–433
subtool, 135
fingers, adding in ZSphere, 155, 155
flares, adding, 271, 272
Flat Color material, 340, 340, 349
Flat render quality setting, 50, 51, 389–390, 390
Flip H function, SpotLight, 361
Flip V function, SpotLight, 361
flipped textures, 468
Float brush, ZSketch, 171–172
Floor button
casting shadows on ground, 399
draw palette functions, 46, 46
right shelf functions, 38–39, 38–39
Floor render pass, 436
Flush brush, ZSketch, 171–172
fly-out libraries, left shelf
alpha library, 28, 28
materials presets, 29–30, 30
overview of, 25
sculpting brush, 25–27, 26
stroke type, 27, 27–28
textures, 28–29, 28–29
Focal Shift slider, 35–36, 35
FocalLength slider, 46, 46
folders
adding to LightBox, 24
searching LightBox contents, 24, 24
formats
digital image, 6–8, 7
exporting ZBrush documents as other, 21
forms, Standard and Clay brushes defining, 70–72
freeze options, subdivisions, 139
Fresnel Overlay shader, Subsurface Scattering, 426–427
From PolyGroup button, polypainting, 337
Front icon, SpotLight, 361
front lighting, creating, 392
fur, adding, see FiberMesh
Fuse brush, ZSketch, 171–172
Fuse Dynamic brush, ZSketch, 172
Fuse Resize brush, ZSketch, 172
G
Gamma setting, LightCap, 403
Gear3D tool, 100, 100–101
Geometry subpalette, 309, 335, 338
Ghost button
ShadowBox, 192, 204
ZSketching, 179
GIF (Graphics Interchange Format), 6–7
Glow button, 397–398
glow light type, 397–398, 398
GrabDoc button, 299, 299
Gradient button, 330, 330
Graphics Interchange Format (GIF), 6–7
gravity effects, FiberMesh, 381–382, 381–382
grayscale
alpha textures as, 292
creating alpha in Photoshop using, 293
creating alpha in ZBrush using, 295–299, 296–299
Grid icon, SpotLight, 361
grid, in virtual 3D space, 11–12, 12
GroomColorize brushes, FiberMesh, 387, 388
GroomHairLong brush, FiberMesh, 387, 387
GroomHairShort brush, FiberMesh, 385, 385–386
GroomLengthen brush, FiberMesh, 386–387, 387
ground, casting shadows on, 399
Group Split button, 162
Group Visible button
create polygroup using morph target, 126
creating polygroup for eyelids, 125
placing polygons into new group, 122
Groups button, Dynamesh option, 130, 130–131
Grow button (Ctrl+Shift+X), 122
Grp Split button, subtools, 135
GroomHairLong brush, FiberMesh, 387
GroomHairShort brush, FiberMesh, 385, 385–386
GroomLengthen brush, FiberMesh, 386–387, 387
ground, casting shadows on, 399
Groups button, Dynamesh option, 130, 130–131
Grow button (Ctrl+Shift+X), 122
Grp Split button, subtools, 135
hair, FiberMesh
creating mesh, 382–383, 382–383
grooming, 388
lengthening, 386–388, 386–388
preview settings, 380–382, 380–382
rendering using BPR, 428–429, 428–430
styling, 383–386, 384–385
hair, sculpting, 135–140, 136–140
hard disk space, ZBrush requirements, 14
hard surface detail brushes
Backtrack settings, 317
brush depth, 313–315, 313–315
combining settings, 323–324
Curve stroke type, 319–322, 320–321
depth masking, 316, 316
overview of, 312
Picker palette orientation controls, 317–319, 318–319
planar brushes, 312–313, 312–313
headings, LightBox, 23
height, changing LightBox display, 24
Height slider, 434, 434
Helix3D tool, 100
Hide/Show brush base, 280, 280
histograms, alpha textures in Photoshop, 293, 293
hPolish brush
editing mask with, 87, 87–88
masking with, 85, 86
refining surface with, 82, 82
using detailBrush with, 292
HTile sliders, LightCap alphas, 403
hubcaps
adding detail with clip brush, 218–220, 218–220
using alpha textures within ShadowBox, 207–208, 207–208
using MatchMaker brush, 208–211, 208–211
using Radial Symmetry in ShadowBox, 204–206, 204–206
Hue icon, SpotLight, 363
I
icon, creating custom brush, 290–291, 290–291
images
creating noise with, 446–449, 446–449
formats for, 6–8, 7
resolution, 10–11, 11
transforming with SpotLight, 357–360, 358–359
Imbed setting, Depth subpalette, 313–315, 313–315, 318
Import button
creating reference image for ShadowBox, 188
symmetrical projection in SpotLight, 370
Inflate brush
applying Noise effects, 310–311, 310–311
masking with, 85, 86
Initialize subpalette
clip brushes, 215, 215
parametric 3D objects, 95–96, 96
InitZBrush button, 55
insert brushes
adding object to model, 102–105, 103–104
InsertSphere brush, 93–94, 93–94
MeshInsert brush, 92
parametric 3D objects, 94–98, 96
parametric 3D objects, types of, 98–100, 98–101
Spiral3D tool, 110–111, 110–111
Transpose brush, 105, 105–110, 107–110
using deformations, 101–102, 101–102
Insert Connector Mesh button, 148
Insert Local Mesh button, 148
InsertCube brush, 232–233, 233
InsertMeshDot brush base, 282, 282
InsertSphere brush, 103–104, 103–105
Intens slider, masking, 89
Intensity curve, Light, 398, 398
Intensity icon, SpotLight, 363
Intensity slider, sun light type, 394–395
interface, LightCap, 400–401, 400–401
interface, ZBrush. see also palettes
canvas, 20–22, 21
Edit mode, 32–35, 32–35
layout and color presets, 22
LightBox, 22–24, 22–24
navigating canvas, 39–42, 40–42
overview of, 19–20, 20
shelf at top, 31, 31, 35–36, 35–36
shelf on left, 25–31, 26–30
shelf on right, 36–39, 36–39
shelves overview, 25, 25
title bar, 58
Internet, finding reference images, 191
inventory, Tool palette, 54, 54–55
joints
creating deformations of, 258, 258
posing mannequin, 259–260, 259–260
JPEG (Joint Photographic Experts Group) format, 6–7
keyframes
creating on Timeline for current camera view, 470–471, 470–471
indicating unselected layers, 472
recording and exporting movies, 474–475
L. Sym button, 38, 38, 204
Large button, Movie palette, 469
Lasso stroke type, 92, 223
Layer brush, 305–306, 305–306
Layer palette, 48
layers
3D. see 3D layers
creating texture maps, 465–468, 466–468
polypaint, polypaint layers
Layers subpalette
adjusting layer strength, 456–457, 457
animating 3D layers, 471–474, 472–473
baking layers, 458–460, 459–460
creating polypaint layers, 462–465, 462–465
other buttons in, 460–461
overview of, 454, 454–455
Record mode, 455–456, 456
layout, interface, 22
LazyMouse
Backtrack modifiers using, 317
creating alpha Roll, 299–300, 299–300
creating Spin Alpha, 305–306
overview of, 283–284, 283–284
LazyRadius value, LazyMouse
creating alpha Roll, 299–300, 299–300
creating Spin Alpha, 305–306
overview of, 284, 284
Tilt Brush setting, 304
LazySmooth, LazyMouse, 285
LazyStep slider, LazyMouse, 285, 285, 304
leaves, adding to trees, see FiberMesh
legs, adding in ZSphere, 151, 153–156, 153–156
lengthening hair, FiberMesh, 386–388, 386–388
LightBox
accessing SmoothPeaks brush, 458, 458
binding mesh with ZSpheres, 249
Brush library, 27
creating ShadowBox, 182, 182
launching SpotLight from, 356–357, 356–357
overview of, 22–24, 22–24
saving ZBrush projects in, 65
sculpting character's head in, 64–65, 64–68
sculpting hair mesh in, 136
LightBox button, 31, 31
light bulb icons, 392–393
Light Index slider, LightCap, 401
Light Intensity curve, 398, 398
Light palette
overview of, 48, 48–49
pitfalls, 393
working with, 391–393, 391–393
Light Shadows subpalette, Light palette, 399
light switch panel, 392
LightCap
advanced lighting with, 399–400
alphas, 403, 403
creating MatCap material, 410–412, 410–412
editing MatCap material, 412–413, 413
interface, 400–401, 400–401
saving files, 406
settings, 401–403, 402
using background image, 403–406, 404–406
lighting
advanced, see LightCap
creating MatCap materials. see MatCap (Material Capture) materials
glow light type, 397–398, 398
Light Intensity curve, 398, 398
Light palette, 391–393, 391–393
light types, 393, 394
overview of, 391
point light type, 395–396, 396
shadows, 399, 399
spot light type, 396–397, 397
sun light type, 394–395, 395
Lights Type subpalette, 393, 393
Line mode, Backtrack, 317
lips, 126–127, 126–127
Load Movie button, Movie palette, 469
Load Tool button, 218
Local button, right shelf, 38, 38–39
Local Symmetry, 192, 192, 228–229
Lord of the Rings (movie), 2
lossless compression, 7–8
lossy compression, 7–8
luminescent skin, with Subsurface Scattering, 425–427, 426–427
M button, 31, 31
Macro palette, 48
magnet ZSpheres, 149, 149
Magnify By Mask slider, Surface Noise, 441
Make Adaptive Skin button
creating armature into mesh with, 146, 146
creating retopology cage to adaptive mesh, 245, 245
skinning ZSphere character, 156, 156
Make Modified Alpha button, 302
Make PolyMesh3D button, 97, 97, 215
Make Unified Skin button, 178
MakePolyMesh 3D button, 265
mannequins
converting into mesh, 265–266, 265–266
creating multicharacter scene, 260–262, 261–262
editing, 262–265, 262–265
overview of, 259
posing, 259–260, 259–260
Marker palette, 49
Mask Ambient Occlusion button, 349, 464
Mask brush base, 280, 280
Mask by Cavity button, 347–348
Mask by Hue button, polypainting, 337
Mask by Intensity button, polypainting, 337
Mask By Polygroups, 131, 131–132
Mask by Saturation, polypainting, 337
Mask By Smooth button, 443–444, 443–444
Mask Pen brush
activating, 84, 85
creating masks with, 83
stroke types, 89–92, 90–92
Mask render pass, 436
MaskCircle brush, 204–206, 204–206
MaskCurve brush
ClipCurve brush vs., 220
polygrouping in ShadowBox, 197–198, 197–198
shaping in ShadowBox, 193–197, 194–196, 199–201, 199–201
masking
ambient occlusion, polypainting, 349–350
for car body in ShadowBox, 193, 193
cavity, polypainting, 347–348, 347–348
controls, 83–86, 84–86
converting masked area into polygroup, 124
creating noise with image, 446–448, 446–448
depth, 316, 316
editing, 86–88, 86–88
hotkeys and functions, 88–89, 89
MaskPen brush stroke types, 89–92, 89–92
overview of, 83
painting in ShadowBox, 183, 183
by polygroups, 131, 131–132
selection brushes for, 117–120, 118–120
in ShadowBox with MaskCurve, 193–197, 194–196, 199–201, 199–201
using with noise, 443–445, 443–445
Masking subpalette, 347, 464, 464
MaskLasso brush
creating windows in ShadowBox, 203–204, 203–204
lengthening hair in FiberMesh, 386, 386–387
Medicine brush
creating ShadowBox, 182
styling hair in FiberMesh, 384–386
using MaskLasso vs., 203
MaskRect brush
clipping at angle, 228–229, 229
creating body in ShadowBox, 192, 192
creating top view in ShadowBox, 202, 202
refining windows with, 229, 230–231
shaping in ShadowBox, 196, 196
MatCap (Material Capture) materials
creating in Photoshop, 414, 414
defined, 49, 406
editing, 412–413, 413
polypainting, 415–417, 415–417
understanding, 410–412, 410–412
MatchMaker brush, 208–210, 208–211
Material palette, 49, 49
Material presets library
masking with, 83–84, 84
starting sculpture, 66
working with, 29–30, 30
materials. see also lighting
copying and pasting shaders, 407–408, 407–408
downloading, 409, 409
overview of, 406
painting with Shader Mixer, 417–420, 417–420
polypainting, 326–327, 327, 415–417
reacting/not reacting to lighting effects, 49
saving, 409
shaders, 406–407, 407
top shelf brushes for painting, 31, 31
materials, designing
creating MatCap material in Photoshop, 414, 414
editing MatCap material, 412–413, 413
overview of, 410
understanding MatCap material, 410–412, 410–412
Max Points slider, 321, 321–322
Maya, 3D space in, 13
Mc button, 148, 148
MC slider, 148, 148
Medium button, Movie palette, 469
Menu button, LightBox, 23
Menus button, title bar, 58
Menus section, Brush palette, 58
MeshInsert brush, 92
Mirror and Weld button, SliceCurve brush, 129–130
Mixer subpalette, Shader Mixer, 417–420, 417–420
models, creating for film, 2–3, 2–3
Modifiers section, Movie palette, 470, 470
Modifiers subpalette, Brush palette, 103, 103
Modifiers subpalette, Material palette, 406–408, 407–408, 412–413, 413
Morph brush, 127, 453, 454
Morph slider, 452, 452
morp targets
creating polygroups using, 126–127, 126–127
deleting, 453
grooming hair, 388
overview of, 449
storing, 450–451, 450–451
switching, 451–452, 452
using Morph brush, 453, 454
Morph UV button, 188, 188
mottling pass, polypainting, 342–345, 342–345
Movie brush
animating 3D layers, 472, 472
defined, 279, 279
editing design in Dynamesh, 81
masking with, 85, 86
reducing stretching with, 69, 69
sculpting hair with Dynamesh, 139–140, 139–140
shaping dragon's head with, 66–67, 67
tips on using, 67
using Dynamesh on model's head, 78, 78
using Elasticity settings, 309–310
Move Elastic brush
creating alpha in ZBrush, 296–297, 297
shaping dragon's head with, 67–68, 68
Move mode
adding ZSphere legs and tail, 153–156, 153–156
binding and posing ZSketch, 174
creating multicharacter scene, 262, 262
creating ZSketch, 166, 166
editing mannequin, 263, 263
making 2.5D brush strokes, 56
navigating canvas, 39, 39–40
posing mannequin, 259, 260
retopology with ZSpheres, 238, 243
tips on ZSketching, 171
top shelf, 31, 31
Transform palette, 58
using contact points with, 476
working with ZSpheres, 143–144
Move Topological brush, 80–81, 81
Movie palette
buttons, 468–470, 469–470
overview of, 49–50, 50
movies, recording and playing, 474, 474–475
Mp button, 148, 148
Mrgb button, 31, 31
Multi-marker tool, 49
multicharacter scene, creating with mannequin, 260–262, 261–262

designation
layers, 455, 455
subtools, 138, 138
navigation
of canvas, 39–42, 40–42
of canvas with right shelf controls, 36–39, 40–42
negative ZSpheres, 149, 149
New button, LightBox, 24, 24
New From Polypaint button, 466, 466
New Light button, LightCap, 400, 400–401
noise. see also surface noise
adding to alpha texture, 301, 302
adjusting layer strength, 456
brush effects, 310–311, 310–311
Noise Curve, layer strength, 456
NoiseMaker plug-in, 310–311
normal map, 14
normals, polygon geometry, 14, 14
Nudge brush
applying Elasticity settings to, 309–310, 309–310
shaping model's head with, 68, 68
Nudge icon, SpotLight, 362, 371–372
NURBS (non-uniform rational basis spline), 13

Paint icon, SpotLight, 363
painting. see also polypainting
3D tools with textures, 53
directly on model in ZBrush, 2
materials, 414
materials with Shader Mixer, 417–420, 417–420
polypainting materials, 415–417, 415–417
palettes
Alpha palette, 44, 44
Brush palette, 45, 45
Color palette, 45, 45
Document palette, 46, 46
dragging and removing, 43
Draw palette, 46, 46
Edit palette, 47
File palette, 47–48, 48
Layer palette, 48
Light palette, 48, 48–49
loading tray with favorite, 43
Macro palette, 48
Marker palette, 49
Material palette, 49, 49
Movie palette, 49–50, 50
overview of, 42–44, 42–44
Picker palette, 50
Preferences palette, 50
Render palette, 50–51, 51–52
Stencil palette, 51–52, 53
Stroke palette, 52–53, 53
Texture palette, 53, 53–54
Tool palette, 54–57, 54–57
Transform palette, 58, 58
and trays, 42
Zplugin palette, 58
ZScript palette, 58
panoramic images, used as LightCaps, 403–406, 404–406
parametric 3D objects
Arrow3D, 100
Circle3D, 100
Cone3D, 98
creating teeth with, 94–98, 95–98
Cube3D, 98
Cylinder3D, 98
Gear3D, 100, 100–101
Helix3D, 100
Plane3D, 99
Ring3D, 99, 99
Sphere3D, 98, 98
Sphereinder3D, 101
Spiral3D, 100
SweepProfile3D, 99
Terrain3D, 99
Path mode, Backtrack, 317
Pause button, Movie palette, 469
Persp button
Draw palette functions, 46, 46
right shelf functions, 38, 38
sculpting hair by toggling, 140
turning off when making selection, 115
photographs, limitations as alphas, 294
Photoshop
compositing render passes in, 435, 435–436
compositing specular pass in, 436–437, 437
creating alpha in, 293–295, 293–295
creating MatCap material in, 414, 414
setting up document resolution for, 434, 434
ZBrush and, 433–434
ZBrush support of, 46
Photoshop (PSD) document format, 6
Picker palette, 50, 317–319, 318–319
Pin icon, SpotLight, 360, 365, 365
Pinch brush base, 281, 281
Pirates of the Caribbean (movie), 2
pixels
  anatomy of, 3–4, 4
  channels and color depth, 5–6, 5–6
  pixols vs., 15, 15
  smoothing images with antialiasing, 4
  understanding resolution, 7
pixels per inch (ppi), document resolution, 9
pixols, pixels vs., 15, 15
Placement subpalette, Light palette
glow light type, 397–398, 398
point light type, 395–396, 396
spot light type, 396–397
planar brushes
  adjusting brush depth, 314–315, 314–315
  Backtrack settings for, 317
  overview of, 312–313, 312–313
Plane mode, BackTrack, 317
Plane3D tool, 99
Play Movie button, Movie palette, 469
plug-ins
  accessing with Zplugin palette, 58
  launching from top shelf, 31, 31
  SubTool Master and Transpose Master, 141–142
  ZAppLink, 46
PNG (Portable Network Graphics), lossless compressions with, 7–8
point light type, 395–396, 396
points (vertices), polygons, 13, 13–14
Polish brushes
  overview of, 279, 279
  refining surface with, 82, 82
PolyF button
  creating polygroups with
    SliceCurve brush, 129, 129–130
  creating teeth with parametric 3D objects, 95–96
  mesh view options, 40, 40
  previewing new topology as you work, 241, 242
  turning off visibility of polygroup with, 124
  using clip brushes, 211, 220
  using Dynamesh on model, 77
  viewing polygroup color with, 120–121, 123
polygons
  anatomy of, 13, 13–14
  changing number of, 78
  digital clay as, 62, 62–63
  dynamic subdivision levels and, 73–75, 74–75
  resolution, 10–11, 11
  vertices in ZBrush vs. other software, 13
PolyGroup button, 219–220, 219–220
PolyGroup tool, 218–220, 218–220
polygroups
  arranging face into, 121–123, 122–123
  creating for eyelids, 124–125, 124–125
  creating with morph target, 126–127, 126–127
  and Dynamesh, 128–131, 128–132
  masking by, 131, 131–132
  for mesh resolution in ShadowBox, 184, 184
  overview of, 120, 120, 123–124
  using in ShadowBox, 197–198, 197–198
  working with, 121
Polygroups subpalette, 122
polymesh editing
  appending subtools. see subtools
  creating armature with ZSpheres. see ZSpheres
  creating ZSketch. see ZSketch
  overview of, 113
  using selection brushes. see selection brushes
  working with polygroups. see polygroups
polypaint layers
  creating, 461–465, 462–465
  creating texture maps, 465–468, 466–467
Polypaint subpalette, 327, 327
polypainting
  activating, 329, 329
  ambient occlusion masking, 349–350, 349–350
  basics, 326–328, 326–328
  blurring strokes, 332, 332
  cavity masking, 347–348, 347–348
  color blending, 331, 331
  creating base coat, 337–339, 337–339
  creating color zones, 339–342, 340–341
  creating design, 376–377, 377
  customizing brushes, 332, 332
  filling object with color, 333, 333
  materials, 326–327, 327, 415–417, 415–417
  mottling pass, 342–345, 342–345
  subdivisions and, 335, 335
  subsurface details, 345–346, 346
  surface details, 351–353, 351–353
  techniques, overview, 326, 335–337, 336
using brush texture, 334, 334
using Curve mode with, 374–376, 375–376
using Shader Mixer, 417–420, 417–420
PolySphere
appending hubcap to, 208–210, 208–210
applying LazyMouse to Standard brush, 283–284, 283–284
overview of, 65, 65–67, 67
sculpting hair mesh by appending, 136–137, 136–137
using clip brushes, 211–212
using ClipCurve brush, 220–223, 220–223
pores of skin
adjusting layer strength, 456–457, 456–457
baking layers, 457–460, 457–461
Portable Network Graphics (PNG), lossless compressions with, 7–8
posing characters
with ZSketch, 173–176, 173–176
with ZSpheres and Transpose Master, 257–258, 257–258
posing mannequins, 259–260, 259–260
ppi (pixels per inch), document resolution, 9
Preferences palette, 50
Preserve Length slider, hair, 385, 385, 388
Preview mode
glow light type, 397–398
new topology as you work, 241–242, 241–242
rendering with, 389–390, 390
retopology tips for, 243
spot light type, 396–397
unified meshes, 177
unified skin in ZSketch, 167–170, 168–170
ZSphere legs, 153, 153
Preview render quality setting, 50
preview settings, FiberMesh, 380–382, 380–382
progress bar, ambient occlusion mask, 349, 349
Project brush base, 280, 280
Project Morph button, morph targets, 452
projection. see also SpotLight projection
of retopologized surface, 245–247, 246–247
ZProject brush and, 247–249, 247–249
Projection Master button, 31, 31
Projection mode, SpotLight, 355
PSD (Photoshop) document format, 6
Pump brush base, 282, 282
Push Pull brush, 171
Q hotkey. see Draw mode
Quick Pick section, Tool palette, 54, 54
Quick Sketch button, 31, 31
QuickTime format, exporting movie in, 474
R hotkey. see Rotate button
Radial button, Lights Type subpalette, 393–394, 394
Radial Fade slider, 301, 301
Radial Symmetry, 204–208, 204–208
Radius icon, SpotLight defined, 360
projecting image, 365, 365
sculpting references, 373, 373
sculpting with, 369, 369
Rake brush, sculpting hair, 140
RAM
using undos with sculpting and, 47
ZBrush requirements, 14
raster graphics, and pixels, 3–4, 4
REC button
animating 3D layers, 472–473
creating polypaint layers, 462, 462–463
layer Record mode, 455
Record button, Movie palette, 469
Record mode, 3D layers
baking layers, 458–461, 459–460
overview of, 455–456, 456
recording movies
Movie palette controls for, 49, 50
in TimeLine, 474, 474–475
Rect stroke type, with Mask Pen brush, 90–91, 91
Redo button, Edit palette, 47
redo hotkeys (Ctrl+Shift+Z), 47
reference images
creating model in ShadowBox, 192, 192
finding, 191
sculpting in SpotLight, 372–374, 373–374
shaping in ShadowBox with MaskCurve. see MaskCurve brush
using in ShadowBox, 187–191, 187–191
ReflectedMap material, 407–408, 407–408
Relative button, LazyMouse, 285, 285
render filters, BPR, 430–433, 430–433
render modes, 389–390
Render palette, 50–51, 51–52, 390
render passes, 435, 435–436
rendering. see also lighting; materials, BPR techniques for. see BPR (Best Preview Render) mode
hair created with Fibermesh, 428–429, 428–430
movies using BPR, 474
overview of, 389
render modes, 389–390
saving often while, 390
resolution
adjusting mesh in ShadowBox, 184–187, 184–187
changing number of polygons using Dynamesh, 78
converting mannequin into mesh, 265
as density in 3D objects, 13
editing design in Dynamesh, 80, 80–81
image, 10–11, 370
overview of, 8
previewing unified skin in ZSketch, 168–169
screen, 8–9
sculpting hair at lower Dynamesh, 140
setting document, 9, 434, 434
using Radial Symmetry in ShadowBox, 204
Resource Interchange File Format (RIFF) document format, 6
resources
digital art, 16–18, 17
reference images for dragons, 64, 64
Restore function, SpotLight, 361–362
retopologizing character mesh
basic character mesh, 237–238, 238
converting retopology cage to adaptive mesh, 245, 245
establishing edgeflow, 238
overview of, 236, 236
previewing as you work, 241–242, 242
projection of surface, 245–247, 246–247
with third-party tools, 247
tips for, 243–244, 243–244
with ZSpheres, 238–241, 238–241
Rgb button, 31, 31
RGB images
channels and color depth, 5–6, 5–6
top shelf brush controls for painting, 31, 31
Rgb mode
ambient occlusion mask, 350
projecting image in SpotLight, 365
sculpting with SpotLight, 369
using mottling pass, 343–344
Rgb mode, polypainting
activating brush, 326, 329
activating polypaint, 328, 328
blurring strokes, 332, 332
brush texture, 334
color blending, 331, 331
creating base coat, 338
RIFF (Resource Interchange File Format) document format, 6
Rigging subpalette, 250–251
Roll feature, alpha textures, 299–300, 299–300
Rotate button
binding mesh with ZSpheres, 252, 252
deforming multiple subtools, 255–257
making 2.5D brush strokes, 57
navigating canvas with, 39, 39–40
top shelf, 31, 31
Transform palette, 58
working with ZSpheres, 144
Rotate icon, SpotLight
defined, 360
projecting image, 365, 365
sculpting, 368
symmetrical projection, 370–372, 370–372
transforming images, 358–359, 359
Rotate mode
duplicating teeth using Transpose, 109–110, 109–110
editing mannequin, 263
holding Shift key after starting, 115
posing figure using, 258
posing mannequin using, 260
of Transpose, 132
rotation axes buttons, 38, 39–40
sampling, 72
Saturation icon, SpotLight, 362–363
Save As button, Movie palette, 469
saving
alpha textures in Photoshop, 294, 294
brush presets for color zones, 339, 340
brush presets to brush library, 286
custom brush presets, 285–286, 286
custom brushes, 104
LightCap files, 406
materials, 409, 415
morph targets, 450–451, 450–451
polypaint information, 328
SpotLight sessions, 357, 357
transpose projects, 256
using File palette buttons, 47, 47–48
while rendering, 390
ZBrush files, 65
ZProjects vs. ZTools, 141
SBend deformer, 101–102, 101–102
Scale brush presets, 300
Scale button
navigating canvas with, 39, 39–40
top shelf, 31, 31
Transform palette, 58
working with ZSpheres, 144
Scale icon, SpotLight
defined, 359, 359–360
projecting image, 364–365, 365
sculpting references, 373
Scrupling with, 369
Symmetrical projection, 371, 371
Scale mode
Adding ZSphere legs and tail, 153–156, 153–156
Appending ZSphere to model, 151, 151
Creating multicharacter scenes, 262, 262
Creating ZSketch, 166, 167
Duplicating teeth using Transpose, 109–110, 109–110
Editing mannequins, 263, 264–265
Moving subtools easily, 137, 138
Working with CurveTube brush, 270, 270
Scale slider, 310–311, 441–442
Screen blend mode, Shader Mixer, 419, 419
Screen resolution, 8–9
Scroll control, 37, 38
Sculpting, see digital sculpting
Sculpting brush fly-out library
Brush algorithms, 72–73
Mask controls, 83–86, 85–86
Move brush, 66–67, 67
Move Elastic brush, 67–68, 68
Nudge brush, 68, 68
Polish brushes, 82, 82
Saving brush presets to, 286
Scale brush presets, 300
Working with, 25–27, 26
Sculpting brushes
Brush depth and, 313–315, 313–315
Creating model with, 63–68, 64–65
Hotkeys and, 83
Masking by polygroups with, 132
Merging model parts, 161, 161
Modifying with alpha textures, see Alpha textures
Picker palette used for, 50
Polypainting using, 326
Skinning ZSphere model, 158, 158
In SpotLight, 368–370, 369
Styling hair in FiberMesh, 383–386, 384–385
In ZSketch, 67–68, 163–165, 163–165, 178, 178
SDiv (subdivision) levels
digital sculpting with, 73–75, 74–75
For Dynamesh, 77
Freeze options in Dynamesh, 139
For LazyMouse added to Standard brush, 283
Maintaining when merging subtools, 162
For orientation settings in Picker palette, 318, 318
For Planar brush, 312, 312
For polypainting, 326, 326, 335, 335, 338
For projecting retopologized surface, 246, 246
For skinning ZSphere model, 157–158, 158
For SpotLight’s symmetrical projection, 372
For unified meshes, 169
Working with, 73–75, 74–75
Sdns slider, unified meshes, 169
Search
Brush fly-out library, 66
Folder contents in LightBox, 24, 24
Sculpting brush library, 26
Secondary color, for erasing polypainting, 329–330, 329–330
Select Mesh button, ZSpheres, 250, 250
Selection brushes
Masking selections, 117–120, 118–120
Overview of, 114
Selecting part of model, 114–116, 114–116
Selection button, 291, 291
SelectLasso brush
Creating polygroup for eyelids, 124
Creating polygroup for face, 121–122, 122
Creating polygroup using morph target, 126
Defined, 21
Freeform selections with, 117
Masking selections with, 118–119, 119
Switching to, 116
SelectRect brush, 21, 118–119, 118–119
Shaded render pass, 435
Shader Mixer, 417–420, 417–420
Shaders, material
Copying and pasting, 407–408, 407–408
Overview of, 406–407, 407
Shadow render pass, 436
ShadowBox
Adjusting resolution of mesh, 184–187, 184–187
Creating, 182–183, 182–184
How it works, 182, 182
Refining edges of meshes, see Clip brushes
ShadowBox button, 183, 183–184
ShadowBox, creating model
Alpha textures, 207–208, 207–208
Creating, 191–193, 192–193
Deforming multiple subtools, 254–257, 254–257
MaskCircle brush, 200–201, 200–201
MaskLasso brush, 203–204, 203–204
MatchMaker brush, 208–210, 208–211
polygrouping, 197–198
Radial Symmetry, 204–206, 204–206
refining using clip brushes. see clip brushes
retopology with ZSpheres, 244
top view, 201–202, 202
shadows
adding ambient occlusion to BPR renders, 421–422, 421–422
with ambient occlusion mask, 349–350, 349–350
LightCap settings, 403
working with, 399, 399
shelves
accessing buttons using spacebar, 36
on left, 25–31, 26–30
overview of, 25, 25
on right, 36–39, 36–39
at top, 31, 31, 35–36, 35–36
Shield subtool, 422–423, 422–424
Shift key
activating Smooth brush, 68, 71
activating smoothing brushes, 83, 114
holding after starting rotation, 115
Shift+F. see PolyF button
Shift+Z (toggling SpotLight), 355
Shrink button (Ctrl+Shift+S), 122
SingleLayer brush base, 281, 281
Size Edit curve, Spin Alpha, 305–306, 305–306
Size slider
clip brush options, 218, 218
creating alpha in ZBrush, 296, 296
Curve mode, 322
sketching. see ZSketch
skinning ZSpheres

adapting skinning, 145–146, 145–146
classic adaptive skinning, 147–150, 147–150
creating model, 146, 146, 150–151, 150–152, 156–158, 156–158
errors, 151
overview of, 144
previewing unified skin in ZSketch, 167–170, 168–170
SkinShade4 material, masking with, 84
Skin_ZSphere subtool, 245
Sky Captain (movie), 2
SliceCurve Brush, 128–130, 128–130
sliders, on top shelf of canvas, 31, 31
slot buttons, shaders, 406–407, 407
Small button, Movie palette, 469
Smooth Bend deformer, 101–102
Smooth brush
blurring strokes in polypainting, 332, 332
creating ZSketch, 164–167, 165–166
editing design in Dynamesh, 81
editing mask, 87, 87–88
grooming hair, 385, 388
masking, 85, 86
reducing stretching, 68–69, 69
smoothing surface in Dynamesh using, 78–79
tips on using, 70, 70
using detailBrush with, 292, 292
Smooth slider, 168, 169
smoothing
images with anti-aliasing, 4, 4
surface with planar brush, 312–313, 312–313
surface with Shift key, 71
SmoothPeaks brush, 458–460, 458–461
Smudge icon, SpotLight, 362
SnakeHook brush, 57, 307
SnakeHook brush base, 281, 281
Snap setting, Curve mode, 322, 375
Snapshot button, Movie palette, 469
SNormal slider, 445
Solo button
creating polygroup for eyelids, 124, 124
defined, 41
hiding subtools except active one, 134
polypainting color zones, 339, 340
spacebar, accessing shelf buttons, 36
specular map, 463–464, 463–464
Specular mode, LightCap, 402, 402, 410–411
specular pass, 436–437, 437
Sphere3D tool
creating wings with CurveSurface brush, 273
parametric 3D objects, 98, 98
working with CurveTube brush, 269, 270
SphereBrush, 55–57, 55–57
Sphereinder3D tool, 101
spherical volume, brush depth and, 313–315, 313–315
Spin Alphas, 305–306, 305–306
SpinAngle slider, Spin Alpha, 306
SpinCenter slider, Spin Alpha, 305–306, 306
Spiral3D tool, 100, 110–111, 110–111
SPix slider
defined, 37, 37
render passes, 435, 435–436
subpixel anti-aliasing in BPR rendering, 421, 421
Spline mode, BackTrack, 317
Split Hidden button, subtools, 135
spot light type, 396–397, 397
SpotLight
defined, 353
functions, 360–363, 360–363
launching from LightBox, 356–357, 356–357
launching from Texture palette, 354–355, 354–355
transforming images, 357–360, 358–359
SpotLight projection
blending images using fade, 367–368, 367–368
of image, 363–365, 364–365
overview of, 363
pinning to brush, 366, 366
sculpting references, 372–374, 373–374
sculpting with, 368–370, 369
symmetrical, 370–372, 371–372
Spray stroke type, polypainting, 336, 336, 339
Square button
masking selections, 118
using Radial Symmetry in ShadowBox, 204
using with MaskCircle brush, 200, 200
SRadius, 215, 215
SSS Across Subtools, Subsurface Scattering effect, 427, 427
SSS render pass, 436
SSS (Subsurface Scattering) effect, BPR rendering, 425–427, 426–427
SubTool Master plug-in, 141
SubTool subpalette
activating polypaint in, 329, 329
binding mesh with ZSpheres, 251
creating multicharacter scenes, 261
overview of, 133–135
retopology with ZSpheres, 238, 243
sculpting hair, 136, 136
working in, 133–135
subtool transparency, BPR rendering, 422–423, 422–424
subtools
activating Colorize in polypainting, 337
adding ZSpheres for, 144
animating on TimeLine, 475–477, 475–477
defined, 41
deforming multiple, 254–257, 254–257
merging, 160–161, 160–162
moving easily, 137, 138
naming, 138, 138
overview of, 132–133, 133
SubTool Master and Transpose Master plug-ins, 141–142
working in SubTool subpalette, 133–135
sun light type, 393–395, 395
surface details
cavity masking in polypainting, 347–348, 347–348
polypainting, 351–353, 351–353
sculpting with SpotLight, 368–370, 369
surface noise
applying to mesh, 443–445, 446–449
creating, 440–442, 440–443
overview of, 440
using image to make, 446–449, 446–449
Surface Noise interface, 440–442, 441–442
Surface subpalette, Tool palette
applying noise to mesh, 444–445
creating noise with image, 446–449, 446–449
creating surface noise, 440, 440
SweepProfile3D tool, 99
Switch button
creating polygroups with morph targets, 126, 127
deleting morph targets, 453
switching morph targets,
451–452, 452
switching, morph targets,
451–452, 452
Symmetry
adding eyes with InsertSphere brush, 93
binding mesh with ZSpheres, 251
creating alpha in ZBrush, 296
creating model in ShadowBox, 192, 192
creating top view in ShadowBox, 202
creating wings with CurveSurface brush, 274
creating ZSketch, 164–166
deforming multiple subtools, 255
masking with, 83–86
posing mannequin, 259
selection brushes using, 116
shaping in ShadowBox with MaskCurve, 194–195, 194–195
skinning ZSphere model, 157
SliceCurve brush not working with, 129
tips for retopology with ZSpheres, 244
Transform palette, 58, 58
turning on and off with X hotkey, 66, 346
using ClipCurve brush with,
222–223, 222–223
using Curve mode with polypaint,
375, 375
using Radial Symmetry in ShadowBox, 204–206, 204–206
ZSpheres working with, 144
T hotkey. see Edit mode
Tablet Pressure settings
Brush palette, 288–290, 288–290
creating Spin Alpha, 305–306
305–306
polypainting with color blending,
331, 331
Trails feature, 308
Tagged Image File Format (TIFF), 6–7
tail, adding ZSphere, 153–156, 153–156
teeth
adding to model using insert brush, 102–105, 103–104
bending using deformations,
101–102, 101–102
creating with parametric 3D objects, 94–98, 95–98
duplicating using Transpose, 109–110
Terrain3D tool, 99
texture coordinates, UV, 188, 466
Texture Map subpalette
creating reference image for Shadowbox, 188, 188–190, 190
creating texture maps, 466–468, 466–468
texture maps, creating, 465–468, 466–468
Texture palette
launching SpotLight from,
354–355, 354–355
overview of, 53, 53–54
textures
alpha. see alpha textures
flipped, 468
textures library, 28–29, 29
third-party tools, retopologizing character, 247
TIFF (Tagged Image File Format), 6–7
tilde ~ key, 298, 298
Tile H function, SpotLight, 361
Tile Proportional icon, SpotLight, 360–361
Tile Selected icon, SpotLight, 361
Tile Unified button, SpotLight, 361
Tile V function, SpotLight, 361
Tilt settings, alpha textures, 304, 304
TimeLapse button, Movie palette, 469
TimeLine
animating layers, 471–474, 472–473
contact points, 475–477, 475–477
creating keyframes for current camera view, 470–471, 470–471
Movie palette and, 468–470, 469–470
overview of, 468
recording and exporting movies, 474–475
showing, 470, 470
tires
creating with clip brushes, 215–217, 215–218
hubcaps for. see hubcaps
title bar, 58
toes, adding ZSphere, 155, 155
Tool palette
  2.5D brush strokes in, 55–57, 55–57
  overview of, 54–57, 54–57
  subpallets within, 44, 44
  trays in, 42–43, 43
Tool Undo slider, 47
top view, of model
  clipping at an angle with ClipCurve, 225–230, 226–230
  creating in ShadowBox, 201–202, 202
  overview of, 41
  refining edge using ClipCurve, 225, 225
Topogun, 247
topology. see also Dynamesh;
  retopologizing character mesh, 76, 76
Topology subpalette, 238
TposeMesh button, 254
Trails feature, brush effects, 307–308, 308
Transform Gyro, 57
Transform palette, 58, 58
transforming images, with SpotLight, 357–360, 358–359
translucency, with WaxPreview, 424–425, 424–425
Transpose Master plug-in
  deforming multiple subtools with, 254–257, 254–257
  overview of, 141–142
  posing characters with, 257–258, 257–258
  trays, working with, 42
Trim brush base, 282, 282
Trim Dynamic brush, 82
TriShaders material, 407, 407
Turntable button, Movie palette, 469
Twist options, alpha textures, 307, 307
Undobutton, 47, 243
unified meshes
  creating, 176–177
  previewing unified skin in ZSketch, 167–169, 168
  retopology vs., 236
  in ShadowBox with unified skin method, 184
  tips for creating, 179
  unified skin palette, 168–170, 168–170
Use Classic Skinning button, 147–149, 147–149
Use Global Settings button, Trails, 308, 308
UV Map subpalette, 188, 188, 466–468, 466–468
UV texture coordinates, 188, 466

vector images, 8
vertical lines, 284, 284
VTile sliders, LightCap alphas, 403
W
W hotkey. see Move mode
Wax Preview, BPR rendering, 424–425, 424–425
wheel well
  cutting with MaskCircle brush, 200–201, 200–201
  refining using ClipCurve, 224–225, 225
  sculpting references in SpotLight, 372–374, 373–374
  widescreen resolutions, 10
Window button, Movie palette, 469
windows
  with MaskLasso brush, 203–204, 203–204
  refining using clip brushes, 230–231, 230–231
wings, creating, 273–275, 273–275
World of Tomorrow (movie), 2
world space coordinates, in 3D space, 11–12, 12
wrinkles, creating, 459–460, 460

x- coordinates
  storing pixel information as, 4
  in virtual 3D space, 11–12, 12
  ZBrush canvas, 21
X hotkey. see Symmetry
Xpose button, 41, 42

y- coordinates
  storing pixel information as, 4
  in virtual 3D space, 11–12, 12
  ZBrush canvas, 21
Z

z-coordinates
  in pixols, 15, 15
  in virtual 3D space, 11–12, 12
z-coordinates, canvas, 21
Z hotkey. see Edit mode, SpotLight
Z intensity slider
  brush twist settings, 307
Curve mode, Stroke palette, 320, 322
defined, 35
depth masking, 316
Smooth brush, 69–70
Tilt Brush, 304
Trails feature, 308
Z-speak, fluency in, 77
Zadd button
  brush depth, 314, 314–315
defined, 35
  sculpting with SpotLight, 369
ZAppLink plug-in, 46
ZBR (ZBrush) document format, 6, 21
ZBrush
  creating alpha in, 295–299, 296–299
  introduction to, 2–3
ZBrush Character Creation, Second Edition (Spencer), 15
ZBrush Creature Design: Creating Dynamic Concept Imagery for Film and Games (Spencer), 340, 434
ZBrush documents, 21, 46, 46
ZBrushCentral website, 17, 17
Zcut button, 35
Zoom control, 37, 38
ZPlugin palette, 58, 254
ZPR format, 47, 65
ZProject brush, 247–249, 247–249
ZProjects, 21, 141
ZScript palette, 58
zscripts, loading custom, 58
ZSketch
  adding details, 170–171, 170–171
  binding and posing, 173–176, 173–176
  creating, 163–167, 163–167
  creating unified mesh, 176–178
  overview of, 162–163, 163
  previewing unified skin, 167–170, 168–170
  sculpting, 178, 178
  techniques, 179, 179
  tips on, 171–172, 171–173
  tips on posing, 177, 177
ZSketch brushes
  adding details to face, 170–173, 171–173
  applying pressure settings to, 290
  creating ZSketch with, 164, 167, 167, 179
  techniques, 179
ZSketch mode
  creating ZSketch, 164
too many undos in, 164
ZSphere 3D tool, 142, 142
ZSphere Rig button, 254
ZSpheres
  adaptive skinning, 145–146, 145–146
  adding legs and tail, 153–156, 153–156
  basics, 142–144, 142–144
  classic adaptive skinning, 147–150, 147–150
  creating dragon body, 146, 146, 150–151, 150–152
  errors with, 151
  merging head and body, 160–161, 161
  overview of, 142
  skin ZSpheres, 144
  skinning dragon body, 156–158, 156–158
  strategies, 158–160, 158–160
  tips for, 144, 162
ZSketching with. see ZSketch
ZSpheres, advanced techniques
curve brushes. see curve brushes
deforming mesh, deforming mesh
posing mannequins, 259–266
projection, 245–249
retopologizing character. see retopologizing character mesh
Zsub button, 35, 315
ZTL format, 21
ZTools, saving, 141